

JOURNAL

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• AMERICAN VETERINARY MEDICAL ASSOCIATION •

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92nd Annual Meeting, Minneapolis, August 15-18, 1955

The Minneapolis Meeting—A Message from President Quin	1
The 1955 Session—Official Call	4
Preliminary Program	18

SURGERY AND OBSTETRICS

Occluded Cervix in a Heifer— <i>I. A. Schipper</i>	46
Comminuted Fracture of the Femoral Neck and the Pelvis of a Dog— <i>C. A. Henley</i>	47
Metastasized Tumor in the Abdomen of a Dog— <i>V. V. Middleton</i>	48
Ureteral Abscess in a Sow— <i>Thompson—Rooney—Hoag</i>	49
A Simplified Apparatus for Obtaining Semen from Dogs by Electrical Stimulation— <i>George C. Christensen and Robert W. Dougherty</i>	50

CLINICAL DATA

Chronic Respiratory Disease. III. The Effect of Treatment on the Pleuropneumonia-like Organism Flora of Avian Tracheas— <i>James G. Lecce and F. George Sperling</i>	54
What Is Your Diagnosis?	57
Notes on a Recent Outbreak and Experimental Production of Hepatitis X in Dogs— <i>Newherne—Bailey—Seibold</i>	59
The Use of Hydrocortisone in the Treatment of Joint and Tendon Disorders in Large Animals— <i>J. D. Wheat</i>	64
The Recovery of <i>Lentospira Pomona</i> from Two Herds of Cattle and Observa- tions on Selected Cases from Thirty-Eight Infected Herds in California— <i>DeLay—Howarth—Eddie</i>	68
A Simple Direct Technique for Counting Avian Blood Cells— <i>S. E. Sadek</i>	72
A New Approach to Bovine Bloat Therapy— <i>R. O. Rydell</i>	74

NUTRITION

Riboflavin and the Health of Farm Animals— <i>R. C. Klussendorf</i>	76
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EDITORIAL

The Salk Vaccine	78
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(Contents continued on adv. pages 2 and 4)

Volume 127

JULY 1955

Number 940

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CONTENTS

(Continued from Cover)

THE MINNEAPOLIS SESSION

AVMA Officers, 1954-1955	12
House of Representatives	13
The Executive and Legislative Sessions	13
Message from the General Chairman, Committee on Local Arrangements	14
Chairmen, Local Subcommittees	15
Committee on Local Arrangements	16
Parking and Airport Facilities	16
Message from the Chairman of the Committee on Women's Activities	16
Women's Activities	17
Message from the President of the Women's Auxiliary	32
Women's Auxiliary Officers	35

SURGERY AND OBSTETRICS

Unusual Foreign Body in Horse's Mouth	46	A Massive Transfusion	52
More Pigs by Double Breeding	48	Hysteria in the Parturient Sow	52
Calving Losses in Young Heifers	48	Intestinal Anastomosis in a Calf	52
Saving More Lambs	48	A New Type of Study in Bovine Spermogenesis	52
Hormonal Induction of Lactation	49		

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CONTENTS—Continued

Artificial Insemination in Goats	53	Intrapleural Use of Erythromycin	53
Spayed Heifers Make Cheaper Gains	53	Pregnancy Disease in Ewes	53
Identical Twins Used in Bovine Male Fertility Studies	53	Factors that Influence Calf Size	53
		Cortisone Therapy and Anesthesia	53

CLINICAL DATA

Immunization Against Lungworms	56	Industrial Molybdenosis in Cattle	67
Fat Heifers Become Poor Milkers	56	Charbray Calves Sell Well	67
Anthrax Septicemia in Man	56	Antibiotics as Deodorants	73
Treatment for Bone Spavin in Horses	56	Improved Agents for Rabies Control	73
A Veterinarian Contracts Leptospirosis ..	58	Lead Poisoning in Cattle	73
Anthrax in Man from Bone Meal	62	Effect on Milk of Feeding Aureomycin ..	75
Vaccine for Avian Lymphomatosis	63	Control Worms by Rotating Pastures	75
Poultry Parasites and "Deep Litter"	63	Effect of Forage Extracts on Bloat	75
Diseases Transmitted by Endoparasites ..	63	Therapy for Turkey Hexamitiasis	75
Cattle Scabies Report (map)	63	Sheep Scabies Report (map)	75

NUTRITION

Vitamin Ingredient Found in Thymus	77	Citrus Pulp Substituted for Silage	77
Sources of Vitamin B ₁₂	77	Effect of Feed on Swine Leanness	77

CURRENT LITERATURE

ABSTRACTS

Telangiectasis of the Bovine Liver—Parts II, III, IV, 80.

FOREIGN ABSTRACTS

Leptospirosis in Tunisia, 80; Leptospirosis of Animals in Italy, 80; Cultivation of Hog Cholera Virus in Spleen Tissue Medium, 80.

BOOKS AND REPORTS

Report of the Tokyo Government Experiment Station for Animal Hygiene, 80; A Free Library of Books on Horses, 81; Diseases Transmitted from Animals to Man, 81; Leptospirosis, 81; Index of Treatment in Small Animal Practice, 81.

THE NEWS

Dr. B. T. Simms Named Director, Livestock Research, Agricultural Research Service, U.S.D.A.	82	Student Chapter Activities	83
Executive Board Nominations in Districts V and VII	82	Women's Auxiliary	85
News From Washington	84	Applications	86
Openings for Veterinary Meat Inspectors in Hawaii	83	U. S. Government	92
Laboratory Refresher Courses	83	Among the States and Provinces	93
Hydatidology Congress	83	Foreign News	98
		State Board Examinations	99
		Veterinary Military Service	99
		Births	99
		Deaths	99

MISCELLANEOUS

The Rabbit Threat in San Juan County, 79; The Meat Quality of Swine Breeds, 79; Control of Swine Fever in Germany, 79.

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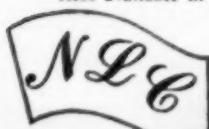
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AVMA ★ Report

—Veterinary Medical Activities—

♦ President A. H. Quin was the principal speaker at the exercises held for 13 Army and Air Force veterinary officers graduating from Walter Reed Army Medical Center's fourth class in veterinary medicine on June 3.

* * *

♦ President A. H. Quin attended and appeared on the programs of the meetings of the Wyoming V.M.A., June 12-13; Montana V.M.A., June 15-17; Utah V.M.A., June 20-22; and Idaho V.M.A., June 23-25.

* * *

♦ President-Elect Floyd Cross attended the golden anniversary and dedication ceremonies of the new veterinary hospital at the School of Veterinary Medicine, Kansas State College, on June 2.

* * *

♦ Executive Secretary J. G. Hardenbergh attended and spoke at the precommencement ceremonies held for graduating seniors at Ohio State University, June 9, at which the "veterinary oath" was taken by members of the class.

* * *

♦ Editor-in-Chief W. A. Aitken participated in the program of the Eastern Illinois V.M.A. held in Champaign, June 2.

* * *

♦ Assistant Executive Secretary H. E. Kingman participated in the program of the Michigan State College Student Chapter at East Lansing, June 2, and the summer meeting of the South Carolina Association of Veterinarians in Columbia, June 16-18.

* * *

♦ The AVMA Special Committee on Insurance (Dr. O. Norling-Christensen, chairman; Carl A. Brandy, Homer D. Carter, G. G. Graham, S. W. Haigler, Lee T. Railsback) met at Association headquarters, June 7. Progress is being made in developing a program of group health and accident insurance for AVMA members. A full report on the activities of this committee will be made to the House of Representatives at the annual meeting in Minneapolis.

* * *

♦ Thirty-seven officers of the Army and Air Force Veterinary Corps, who attended the Dairy and Meat Hygiene School at the Quartermaster Depot, visited Association headquarters on June 24. Members of the AVMA staff spoke to the group on the organization and activities of the Association and on other professional matters.

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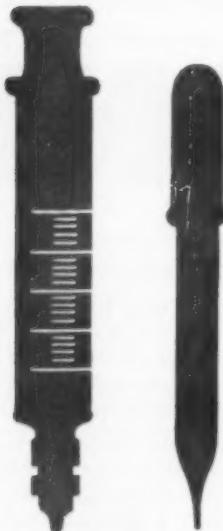
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1. Grumbles, L. C., Wills, F. K., and Boney, W. A.: J. Am. Vet. M. A. 124: 217, 1954. 2. Smith, H. W.: Vet. Rec. 66: 215, 1954. 3. Cosgrove, A. S.: Vet. Med. In press.

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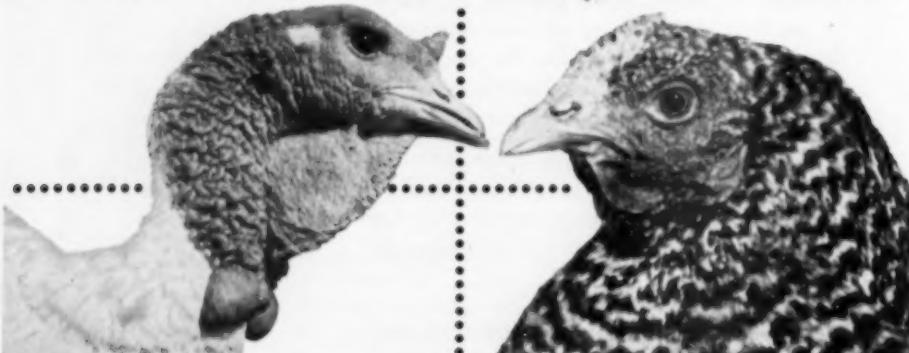
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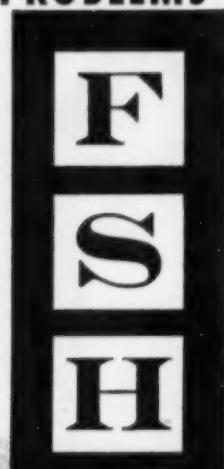
*Rachman, M., and Frucht, T. R.: Vet. Med. 49:341, 1954.

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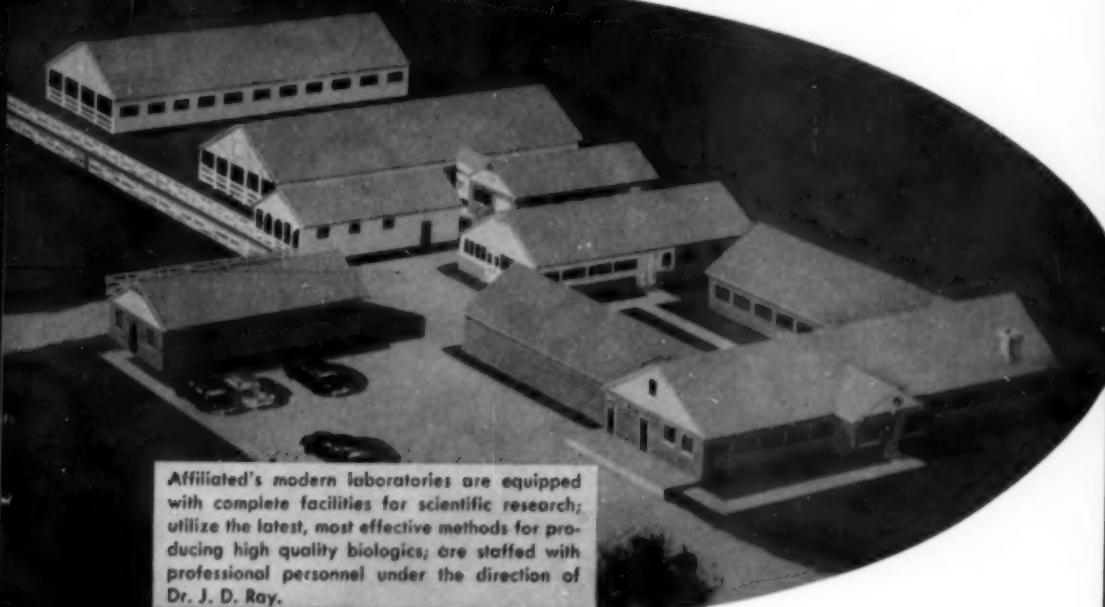
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Affiliated's modern laboratories are equipped with complete facilities for scientific research; utilize the latest, most effective methods for producing high quality biologics; are staffed with professional personnel under the direction of Dr. J. D. Ray.

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TETRACYCLINE HYDROCHLORIDE VETERINARY
SQUIBB

STECLIN (Tetracycline Hydrochloride), Squibb's new wide spectrum antibiotic for domestic animals, is now available to veterinarians in two forms—in vials for injections, and in capsules for oral administration.

In either form, the unusually low incidence of toxic side effects observed during therapy with Steclin will make this an important drug of wide application. *Clinical tests with humans have indicated that with Steclin—undesirable reactions were absent in 93% of the cases treated.**

Steclin is promptly absorbed into the blood stream, resulting in concentrations highly effective in the treatment of infections caused by tetracycline-susceptible organisms, including gram-positive and gram-negative bacteria, spirochetes, rickettsias, and certain viruses. The antibiotic is rapidly diffused into various body fluids including the cerebrospinal, peritoneal and pleural, and it produces high levels in the urine.

*Finland, M. et al.: J.A.M.A., 154:561, 1954



"STECLIN" is a Squibb trademark.

STECLIN IS SOLD ONLY TO VETERINARIANS,
and is available from your Veterinary
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SQUIBB, Veterinary Department,
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in 2 easy-to-use forms...vials

Steclin is indicated in the treatment of these conditions when due to tetracycline-susceptible organisms: abscesses; bacterial infections associated with canine distemper; bronchitis; calf scours; diphtheria; enteritis; equine influenza; erysipelas; feline enteritis; foot rot; hemorrhagic septicemia; infectious coryza; influenza; lamb dysentery; leptospirosis in dogs; metritis; nephritis; otitis media; parotiditis; peritonitis; pharyngitis; pneumonia; pylonephritis; septic mastitis; staphylococcal and streptococcal infections in the foal; tonsillitis; ulcerations; upper respiratory complications; urinary tract infections.

Steclin Hydrochloride Veterinary for parenteral administration is supplied in vials of 100 mg., 1.0 gm. and 2.5 gm. crystalline tetracycline hydrochloride with ascorbic acid as a buffer, and procaine hydrochloride and magnesium chloride.

Solutions of Steclin Veterinary for parenteral use may be prepared with Water for Injection U.S.P., Dextrose Solution U.S.P. or Sterile Isotonic Sodium Chloride Solution U.S.P. Steclin for parenteral use should be given by deep intramuscular injection or by intraperitoneal administration.

RECOMMENDED DAILY DOSAGE: For small animals, 5 mg. per pound of body weight, administered in divided doses every 6 to 12 hours; for larger animals, 1 to 2 mg. per pound of body weight, administered once per day.

and
capsules



Capsules of Steclin Hydrochloride Veterinary for oral administration are supplied in bottles of 100, each capsule containing 250 mg. crystalline tetracycline hydrochloride.

RECOMMENDED DAILY DOSAGE: For small animals, 25 to 50 mg. per pound of body weight, administered in divided doses every 6 to 12 hours; for larger animals, 5 to 10 mg. per pound of body weight, administered once per day.



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Three sizes
of high-speed
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simple boiling.

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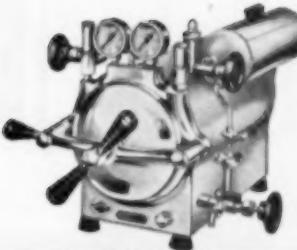
•PELTON•

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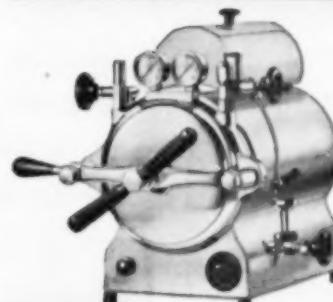
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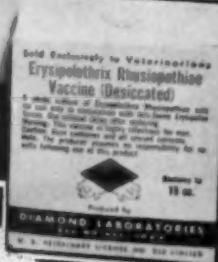
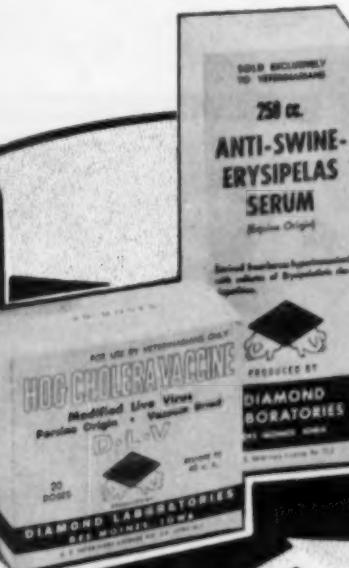
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- Does Not Spread Hog Cholera
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NOW — a new FROMM development . . . TRIVALENT SERUM! By administering TRIVALENT serum a quick, passive immunity is provided against *all three* of the major infectious diseases of dogs.

ALWAYS inject FROMM TRIVALENT when the symptoms of your dog patients indicate that complete protection is needed against these three — distemper — infectious hepatitis — and leptospirosis.

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100 mg., 2.5 Gm.,
5.0 Gm.



Tetracycline-Vet

*tetracycline is a **Pfizer** discovery*

Against these organisms

Micrococcus, Streptococcus, Erysipellothrix, Pasteurella, Corynebacterium, Clostridium, Klebsiella, Escherichia, Pseudomonas, Salmonella, Brucella, Listeria, Vibrio, Neisseria, Hemophilus, Shigella and others.

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Department of
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250 mg., 500 mg.,
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NEW! SOLUBLE POWDER

25 Gm. per lb.
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FEED UP TO 25% LESS!

New Pard Meal is so rich in concentrated food value that you feed less... up to 25% less than with other dry-type meals. Ask your Swift salesman to show you a comparative feeding chart.

it takes men who know meat
to make a meal this good!

Swift's Pard Meal has up to 50% more meat fat

FOR GREATER FLAVOR AND NUTRITION

No wonder dogs have shown a *2 to 1* preference for Pard Meal in actual feeding tests!

It tastes meatier... it *is* meatier! Swift puts extra amounts of meat fat in Pard Meal. And Pard Meal contains every food element a dog

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Like Pard Meal, Swift's canned PARD is the result of years of research in Swift's laboratories and kennels. It completely eliminates the "guesswork" from the science of animal feeding. Pard is all a dog needs or wants, with GOOD BEEF TASTE dogs love!

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ANOREXIA, INABILITY TO RISE, AND DECREASED MILK PRODUCTION CHARACTERIZE KETOSIS

For ketosis unresponsive to glucose

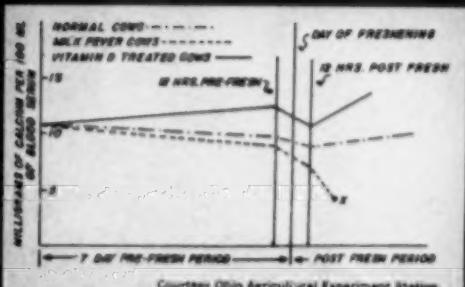
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Clinical studies have shown that CORTONE is particularly effective in treating both pre- and post-partum ketosis in dairy cattle. A single injection frequently produces remission—with milk production returning to normal in as little as three days even in cases which have proved refractory to parenteral glucose.

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SUPPLIED: Saline Suspension of CORTONE Acetate Veterinary: 50 mg./cc., vials of 10 cc.

CORTONE is the registered trade-mark of Merck & Co., Inc., for its brand of cortisone.



Courtesy Ohio Agricultural Experiment Station.

Short-Time Prepartum Feeding

HEAVY DOSES VITAMIN-D

Found Highly Successful

MILK FEVER PREVENTION


 Papers covering work at the Ohio Agricultural Experiment Station on the prevention of Parturient Paresis (Milk Fever) in dairy cows through heavy vitamin-D feeding 5 to 7 days before freshening have been recently released.*

Standard Brands Incorporated, manufacturers of Fleischmann's Irradiated Dry Yeast Type 142-F—a source of vitamin-D used in these tests, is in a position to supply this product. If your veterinary supply house cannot take care of your needs, write us direct.

We believe this preventive will be welcomed by large animal practitioners for use in coping with Milk Fever, a very costly disease for the dairy industry.

For a reprint of the studies on Milk Fever in dairy cows listed below, write *Agricultural Department, Desk JV-65, Standard Brands Incorporated, 595 Madison Avenue, New York 22, New York.*

**Journal of Dairy Science, January, 1955, Vol. XXXVIII, No. 1; J. W. Hibbs and W. D. Pounden.*

Journal of the American Veterinary Medical Association, March 1955, Vol. 126, No. 936; "Vitamin D in Prevention of Parturient Paresis."



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Nolvasan*

GERMICIDAL Ointment

*New bactericide protects surface wounds,
promotes healing AS NO OTHER AGENT*

This new formulation of the high-potency anti-bacterial compound, Nolvasan, offers truly broad bactericidal activity, while preventing development of resistant strains,¹ as frequently occurs with the sulfonamides and antibiotics. Nolvasan complements the natural defenses of the tissues, keeps the site free of bacterial contaminants — healing progresses much more rapidly.²

May be applied topically or under bandage to all cuts and abrasions. Used on wounds of the teats or udders, Nolvasan checks the spread of organisms³ to other quarters or other cows in milking line — an important factor in controlling mastitis.

AN APOLOGY

*Due to the tremendous demand
for Nolvasan CAP-TABS, contain-
ing the dihydrochloride salt,
we are temporarily unable to
fill current orders.*

*This regrettable situation is ex-
pected to be alleviated shortly
and, meantime, our thanks
for your patience.*

¹. Davies, G. E., et al., Brit. J. Pharm., 9:192 (1964). S. Murray J., and R. M. Calman, Brit. Med. J., 1:81 (1955). 3. Lowbury, E. J. L., ibid, 1:985 (1955).

FORT DODGE

In packages of 12/8 oz. jars and
12/1 oz. tubes, the tubes convenient
in small-animal practice. Fort Dodge
Laboratories, Inc., Fort Dodge, Ia.

²"Nolvasan" is the trade mark for Fort Dodge brand
of bis-p-chlorophenylguanidohexane. The ointment
contains the drug in acetate form.

Journal of the American Veterinary Medical Association

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600 S. Michigan Ave., Chicago 5, Ill.

VOL. 127

JULY, 1955

No. 940

The Minneapolis Meeting A Message from President Quin

As president of the American Veterinary Medical Association permit me to extend to you and your families a sincerely cordial invitation to attend our Ninety-Second Annual Meeting at Minneapolis, August 15-18.

There is no doubt that this will be the largest gathering of veterinarians and their wives ever held in the world. All pre-meeting indications point to a registration of approximately 4,500 and, if this is in error, it is on the conservative side.

Minneapolis and St. Paul, the Twin Cities, are within easy reach from all points of the United States and Canada by major highways, by several major airlines, and by transcontinental trunk railroads. And, if you come by car, you are within a few hours drive of one of the most famous resort and game fishing areas of America. Right in Minneapolis there are fine lakes, swimming, boating, truly beautiful golf courses, and about every other form of recreation for you and your wife, and the children if you bring them.

The Committee on Local Arrangements has put their hearts into preparation for this record-breaking session. At this writing, every intricate detail has been covered and it is all pointed at maximum enjoyment for all who attend.

If you are interested in what's new in all branches of veterinary medicine, including both large and small animal practice, the 1955 AVMA meeting is the place to get the answers. Closed-circuit television will again be an important aspect of the technical program. The scientific sections have an especially broad range of subjects for presentation this year.

If possible, arrive in time for the Pre-Convention Conference on Sunday, August 14.

The program will be devoted to "Veterinary Medical Examination and Licensure" and will cover various aspects of practice act requirements, methods of examination, and other currently important subjects. The conference is open to all interested veterinarians and will be of special interest to members of examining boards, association secretaries, members of faculties, and others concerned with veterinary education and practice.



President A. H. Quin

May I make a personal request? Please appoint yourself a committee of one to contact your neighboring veterinarians and urge them to attend this year.

We need you at Minneapolis. You need the multiple values derived from personal attendance. Do make every effort to be in the Twin Cities, August 15-18.

AVMA Officers, 1954-1955

President—A. H. Quin, Kansas City, Mo.
President-Elect—Floyd Cross, Fort Collins, Colo.
Vice-President (Zone 1)—R. H. Wright, Dundas, Ont.
Vice-President (Zone 2)—M. G. Fincher, Ithaca, N. Y.
Vice-President (Zone 3)—McKenzie Heath, Auburn, Ala.
Vice-President (Zone 4)—T. Robert Phelps, Vancouver, Wash.
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Executive Secretary—J. G. Hardenbergh, Chicago, Ill.
Assistant Executive Secretary—H. E. Kingman, Jr., Chicago, Ill.
Treasurer—H. E. Kingman, Jr., Chicago, Ill.

Executive Board

(Year in which terms expire is shown in parentheses)

Chairman—S. F. Scheidy (1958), Drexel Hill, Pa.
District I—T. Lloyd Jones (1957), Guelph, Ont.
District II—S. F. Scheidy, *ibid.*
District III—L. M. Hutchings (1958), Lafayette, Ind.
District IV—R. S. Sugg (1959), Auburn, Ala.
District V—C. F. Schlotthauer (1955), Rochester, Minn.
District VI—J. M. Arburua (1956), San Francisco, Calif.
District VII—E. E. Wegner (1955), Seattle, Wash.
District VIII—W. G. Brock (1956), Dallas, Texas.
District IX—Edwin Laitinen (1957), West Hartford, Conn.
District X—F. J. Kingma (1959), Columbus, Ohio.

EX OFFICIO MEMBERS OF EXECUTIVE BOARD

A. H. Quin (1956), Kansas City, Mo.
Floyd Cross (1957), Fort Collins, Colo.
J. A. McCallam (1955), Washington, D. C.

Board of Governors

S. F. Scheidy, *Chairman*; A. H. Quin, Floyd Cross.

Advisory Committee—AVMA House of Representatives

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M. R. Blackstock, South Carolina
W. O. Kester, District of Columbia
P. G. MacKintosh, Washington
R. C. Snyder, Pennsylvania
C. C. Von Gremp, Georgia

House of Representatives

(As of June 17, 1955)

<i>Votes</i>	<i>Delegate</i>	<i>Alternate</i>
Alabama (3)	McKenzie Head	Joe L. Sledge
Arizona (2)	Keith O. Lassen	Ross M. Carter
Arkansas (2)	W. L. Thomas	Hubert Shull, Jr.
California (5)	Charles J. Parshall	Fred B. Pulling, Jr.
Colorado (3)	Vyrle D. Stauffer	Francis T. Candin
Connecticut (2)	Niel W. Pieper	Irving R. Vail
Delaware (1)	C. A. Woodhouse	
Dist. of Columbia (2)	Fred D. Maurer	D. R. Goode, Jr.
Florida (3)	Jack O. Knowles	Karl R. Owens
Georgia (4)	C. C. Von Gremp	Thomas J. Jones
Idaho (2)	Arthur P. Schneider	L. V. Ruebel
Illinois (5)	A. G. Misener	A. E. Bott
Indiana (4)	Homer D. Carter	George W. Gillie
Iowa (5)	C. D. Lee	Frank B. Young
Kansas (4)	Forrest L. Hart	J. F. Knappenberger
Kentucky (2)	Jacob A. Winkler	F. M. Kearns
Louisiana (2)	W. T. Oglesby	Frank B. Wheeler, Jr.
Maine (2)	Alfred E. Coombs	J. Franklin Witter
Maryland (3)	M. H. Jacobs	
Massachusetts (3)	L. A. Paquin	B. S. Killian
Michigan (5)	Paul V. Howard	
Minnesota (5)	Fred W. Gehman	C. H. Wetter
Mississippi (2)	Andy W. Crawford	W. L. Stroup
Missouri (4)	Paul L. Spencer	O. E. Ellis
Montana (2)	G. A. Morrison	Arthur F. Hayes
Nebraska (3)	W. J. Nelson	P. L. Cady
Nevada (1)	W. F. Fisher	Joseph B. Key
New Hampshire (1)	John H. Westfall	Wilbur G. Collins
New Jersey (3)	Oscar Sussman	H. J. Metzger
New Mexico (1)		
New York (5)	Harry G. Hodges	Clifford H. Hoppenstedt
North Carolina (3)	A. A. Husman	M. M. Leonard
North Dakota (2)	D. F. Eveleth	D. A. Wire
Ohio (5)	R. E. Rebrassier	A. G. Madden, Jr.
Oklahoma (3)	C. H. McElroy	E. R. Walker
Oregon (2)	C. A. Bjork	E. L. Henkle
Pennsylvania (5)	Raymond C. Snyder	J. Robert Brown
Rhode Island (1)	J. W. Armstrong	Ralph Povar
South Carolina (2)	M. R. Blackstock	B. C. McLean
South Dakota (2)	D. L. Cotton	O. H. V. Stalheim
Tennessee (3)	Howard L. Johns	Howard E. Hill
Texas (5)	Paul B. Blunt	Melvin R. Calliham
Utah (2)	F. James Schoenfeld	Jean C. Flint
Vermont (2)	John Canty	C. T. Whitney
Virginia (3)	I. D. Wilson	O. F. Foley
Washington (3)	Peter G. MacKintosh	John D. Stevens
West Virginia (2)	Victor H. Miller	Donald C. Master
Wisconsin (4)	Rolland O. Anderson	John R. Curtis
Wyoming (1)	G. H. Good	Peter E. Madsen
Air Force (2)	Wayne O. Kester	Charles H. Snider
Army (2)	Elmer W. Young	William E. Jennings
NAFV*	L. T. Hopkins	F. W. Crawford
Canal Zone (1)		
Hawaii (1)	John M. Gooch	
Puerto Rico (1)		
Alberta (2)	J. Gordon Anderson	James E. Rattray
British Columbia (2)	Gordon L. Davis	Alexander M. York
Manitoba (2)	Elmer Clark	E. J. Rigby
New Brunswick (1)		
Nova Scotia (1)	R. McG. Archibald	L. G. Neily
Ontario (5)	Robert H. Wright	H. R. Potter
Quebec (5)		
Saskatchewan (2)	J. S. Fulton	Elmer L. Brown
Cuba (5)		Angel M. Morales

*National Association of Federal Veterinarians.

The 1955 Session—Official Call

The Ninety-Second Annual Meeting of the American Veterinary Medical Association will be held in Minneapolis, Minn., Aug. 15-18, 1955. The general sessions, section meetings (including TV demonstrations), and educational and commercial exhibits will be held in the Minneapolis Auditorium.

Executive sessions of the Committee on Budget, Board of Governors, and Executive Board will be held at the Hotel Radisson beginning on Tuesday, August 9, and running through Friday, August 12, with the final session of the Executive Board on Thursday afternoon, August 18.

The House of Representatives will convene on Saturday, August 13, at 9:00 a.m. in the Hotel Radisson. Delegates should time their arrival for not later than Friday afternoon or evening, August 12.

A preconvention conference on Veterinary Medical Examination and Licensure will be held on Sunday, August 14, in the Hotel Radisson beginning at 9:00 a.m. Members of examining boards, association secretaries, livestock sanitary officials, members of veterinary school faculties, and all interested veterinarians are invited to attend this conference.

Convention registration will open at 10 a.m., Sunday, August 14, in the Minneapolis Auditorium and continue daily thereafter.

The Opening Session of the convention is scheduled for 9:00 a.m., Monday, August 15, in the Auditorium. Following the opening ceremonies, addresses, and presentation of awards, the nominations of officers for the ensuing year will take place. A president-elect and five vice-presidents are

to be elected. If a ballot election is necessary, polls will be set up in the executive secretary's office on Tuesday, August 16.

The Women's Auxiliary will hold official sessions of its executive board and house of representatives, also its annual business meeting, at the Curtis Hotel which has been selected as headquarters for a number of Auxiliary functions.

Section meetings will be held in the Auditorium beginning Monday afternoon, August 15, and continuing through Thursday morning, August 18.

A number of group meetings and conferences and meetings of related organizations will be held throughout the week.

Educational exhibits and commercial displays will be set up in the Auditorium. These will open on Monday, August 15, at 8:30 a.m. Exhibit hours will be from 8:30 a.m. to 5:00 p.m., daily.

The President's Reception and Dance, with special entertainment, will be held at two hotels, the Nicollet and Radisson, on Wednesday evening, August 17, following the alumni dinners which will be in various locations.

The convention headquarters of the AVMA and Committee on Local Arrangements will be located in the Auditorium during convention week. Prior to that time, they will be in the Hotel Radisson.

This issue of the JOURNAL contains practically complete details of the Minneapolis program. Members are urged to study it for information about the various events of professional interest and special features which take place at the 1955 convention.

The Mississippi River with Minneapolis flour mills on both banks. The downtown business district is also shown.



Executive and Legislative Sessions (Radisson Hotel)

Tuesday, August 9

3:00 p.m. Committee on Budget, first session—*Room 118.*
7:00 p.m. Committee on Budget, second session—*Room 118.*

Wednesday, August 10

9:00 a.m. Board of Governors, first session—*Room 118.*
2:00 p.m. Board of Governors, second session—*Room 118.*
7:30 p.m. Board of Governors, third session—*Room 118.*

Thursday, August 11

9:00 a.m. Executive Board, first session—*Admiral Room.*
2:00 p.m. Executive Board, second session—*Admiral Room.*
7:30 p.m. Executive Board, third session—*Admiral Room.*

Friday, August 12

9:00 a.m. Executive Board, fourth session—*Admiral Room.*
2:00 p.m. Advisory Committee, House of Representatives—*Room 118.*

Saturday, August 13

9:30 a.m. House of Representatives, first session—*Gold Room.*
2:00 p.m. House of Representatives, second session—*Gold Room.*
7:00 p.m. House of Representatives, third session (if necessary)—*Gold Room.*

Thursday, August 18

1:30 p.m. Executive Board, final session—*Admiral Room.*

Sailboating and fishing are enjoyed by residents and visitors alike on Minneapolis' beautiful Lake Harriet.



Message from the General Chairman, Committee on Local Arrangements

The veterinarians of Minnesota and their wives are greatly honored to be the hosts at the Ninety-Second Annual Meeting of the American Veterinary Medical Association in August. On their behalf,

the workworn. Whatever your vacation dream may be, we are confident you will find it in this "Land of the Sky Blue Waters." The women's local committees have programs for the teen and sub-teen



Dr. Fred W. Gehrman, General Chairman



Dr. H. C. H. Kernkamp, Vice-General Chairman

I extend to you a most cordial invitation to attend. Because we are centrally located, and also because advance registrations are high, we are confident that this meeting will be entered in the annals of veterinary medicine as the largest group of veterinarians ever assembled in the history of our profession. The magnitude of such a meeting shows that veterinary medicine is not static. It is an indication of our scientific and professional progress.

We invite you to plan your vacation in Minnesota, "The Land of Ten Thousand Lakes." Why not make it a combined convention and vacation trip? This area provides a perfect haven for the fisherman, the golfer, the hay fever sufferer, or

agers so, come! Bring the family! Stay as long as you can.

Minneapolis, your convention city, is the trade, industrial, and transportation hub of the Midwest. It is located on the Mississippi River and is a city noted for its parks and lakes. There are 141 parks and 22 lakes within the city limits.

The entire Local Arrangements Committee is sparing no effort to make your stay here educational, entertaining, and restful. We are proud to extend our hospitality and to welcome you to Minnesota.

s/Fred W. Gehrman, *General Chairman, Committee on Local Arrangements.*



Dr. C. F. Schlotthauer (left), ex officio; Dr. W. L. Boyd, ex officio; and Dr. B. S. Pomeroy, General Secretary, Committee on Local Arrangements.

Entertainment



G. E. Jacobi

Reception and Hospitality



R. Fenstermacher

Television



H. H. Hoyt

Hotel and Housing



C. M. Penticuff, Jr.

Garages, Parking, and Transportation



C. H. Schlaudraff

Floral and Special Arrangements



G. O. Schubert

Alumni Dinners



F. C. Driver

Women's Activities



Mrs. R. A. Merrill

Golf Tournament



D. S. Steele

Meeting Rooms and Equipment



Henry Griffiths

Registration and Information



G. E. Keller

Exhibits



J. N. Kercher

Publicity and Public Relations



G. G. Hartle

Committee on Local Arrangements Ninety-Second Annual Meeting

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H. C. H. Kernkamp, *Vice-General Chairman*
B. S. Pomeroy, *General Secretary*
W. L. Boyd, *Ex Officio*
C. F. Schlotthauer, *Ex Officio*

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R. Fenstermacher	G. E. Keller
Henry Griffiths	Mrs. R. A. Merrill
G. G. Hartle	G. O. Schubert
H. H. Hoyt	C. H. Schlauderaff
G. E. Jacobi	D. S. Steele
	C. M. Penticuff, Jr.

Committees

Registration and Information

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Wes Anderson, *Vice-Chairman*
S. K. Andreassen
John R. Berggren
B. M. Bolstad
Goodwin Branstad
C. H. Carl
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E. A. Dornbusch
O. E. Dovre
Jim Fitch
J. B. Flanary
William Gladitsch
Jay Hanson
Donald Hicks
Les Jacobson
V. K. Jensen
Stan Jepson
C. E. Johnson
Herb Kanning
C. E. Krosch
John Larson
W. Lawson
Martin Linnemann
J. P. McCue
D. M. McDonald
John McKay
A. B. Magnusson
W. R. Maher
W. R. Merryman
Howard Meyers
L. A. Moen
Alan Morrow
Glen Nelson
T. H. Nelson

C. F. Parker
L. H. Phipps
G. A. Pollman
N. A. Roettiger
N. A. Runquist
A. J. Schadweiler
C. P. Schmidt
A. O. H. Setzepfandt
R. B. Solac
Dave Stanley
F. W. Therkelsen
W. W. Vollmar
William Welsh
J. B. Wilson, Sr.

Exhibits

J. N. Karcher, *Chairman*
J. H. Sauter, *Vice-Chairman*
John Anderson
F. D. Armstrong
John Berggren Jr.
I. M. Ford
W. B. Haugo
E. S. Hettig
I. S. Osborn
C. W. Parker
O. C. Selby
Ora Smith
Al Weber

Meeting Rooms and Equipment
Henry Griffiths, *Chairman*
Carl Rehfeld, *Vice-Chairman*
J. B. Ardiel
John T. Bell
E. D. Besch
John J. Clark
Paul Cox

V. L. Dahl
John Fogarty
D. R. Knauff
F. D. Knippling
Lester Larson
R. O. Rydell
R. Zemjanis

Entertainment

G. E. Jacobi, *Chairman*
C. H. Wetter, *Vice-Chairman*
William Billings
W. J. Butson
Paul Eder
A. O. Garlie
Jim O. Hanson
J. R. Krohn
A. W. Nyline
L. E. Stock
W. B. Thurber

Garages, Parking, Airports, Transportation

C. H. Schlauderaff, *Chairman*
R. L. Kitchell, *Vice-Chairman*
A. J. Eckstein
T. R. Eliason
E. L. Fitch
E. D. Frederiksen
O. B. Gochauer
O. P. Idsvoog
Derald Johnson
Percy Johnson
E. J. Kading
Charles Lutz
M. Navarro
Walter Peterson

Paul Pinkert	A. W. Nyline	P. H. Riede
R. G. Pyle	Vern Olson	C. F. Schlotthauer
R. W. Rieke	D. M. Oolman	A. H. Schmidt
C. E. Schrafel	L. H. Pint	D. H. Spangler
C. R. Smit	L. T. Railback	A. C. Spannaus
A. R. Smith	Les Redder	A. J. Thompson
A. R. Thompson	Frank Sauer	W. T. S. Thorp
W. White	D. E. Trump	G. Van Duzee
J. B. Wilson, Jr.	R. W. Urbatsch	R. L. West
Public Relations and Publicity		
G. G. Hartle, <i>Chairman</i>	G. Wolf	Hotels and Housing
H. E. Pomeroy, <i>Vice-Chairman</i>	B. A. Zupp	C. M. Penticuff, Jr., <i>Chairman</i>
R. W. Bakke	Alumni Dinners	Stan King, <i>Vice-Chairman</i>
W. A. Bohan	F. C. Driver, <i>Chairman</i>	J. M. Alexander
I. O. Burington	J. M. Alexander	J. H. Cutler
E. R. Carpenter	L. T. Ausherman	H. E. Erickson
J. L. Cavanaugh	F. R. Bathke, Jr.	A. A. Feist
G. V. Chapin	C. E. Burt	H. E. Meyer
N. Frederickson	C. C. Clefisch	G. W. Mittelsted
H. H. Fuglsang	J. H. Dunnwald	O. B. Morgan
D. F. Goetsch	P. C. Enge	Maurice Palmer
Bruce Hohn	J. G. Flint	Floral and Special Arrangements
Robert Leary	Charles Gale	G. O. Schubert, <i>Chairman</i>
L. D. Mersch	Paul Nelson	Ralph Bergman
Thomas Muxlow	Lewis Olson	R. G. Cheezig
G. C. Nugent	Murray Parent	C. O. Enge
Richard Palmer	Mrs. Murray Parent	J. A. Given
A. W. Pennings	J. A. Pomeroy	K. E. Griebe
J. W. Preston	Paul H. Pugh	E. L. Gutschenritter
C. J. Rosell	J. A. Smith	R. L. Hanson
R. Leland West	A. C. Spannaus	M. C. Hawn
John H. Wright	Hospitality and Reception	Mrs. C. Lutz
Television		M. P. Maher
H. H. Hoyt, <i>Chairman</i>	R. Fenstermacher, <i>Chairman</i>	G. L. McNeilly
John Arnold, <i>Vice-Chairman</i>	John Dick, <i>Vice-Chairman</i>	R. A. Merrill
H. Alme	W. L. Boyd	R. G. Molnau
E. K. Bicek	J. N. Campbell	N. G. Mueller
C. W. Burch	R. J. Coffeen	R. M. Sook
John E. Busch	B. L. Cook	R. A. Thompson
L. T. Christensen	H. Evenson	E. A. Usenik
D. H. Clifford	G. S. Failing	Golf Tournament
C. O. Eliason	E. H. Gloss	D. S. Steele, <i>Chairman</i>
T. O. Eliason	C. H. Haggard	William Andberg, <i>Vice-Chairman</i>
George Failing	D. L. Halver	A. P. Antroinen
John Higbee	Carl Hansen	A. A. Connel
D. C. Innes	E. C. Hughes	Paul Lundgren
J. W. Kahl	J. J. Kelly	Ben Porter
E. K. Karnis	G. A. Larson, Jr.	D. E. Simes
G. K. Lang	A. F. Lees	R. M. Stader
E. R. Lindholm	H. G. McGinn	R. E. Vollmar
D. C. Low	R. A. Merrill	Don Watt
T. P. Nankervis	D. B. Palmer	
L. E. Nelson	J. X. Parent	
	B. A. Pomeroy	

Parking and Airport Facilities

There are three large parking ramps in downtown Minneapolis, located at Fourth and Marquette, LaSalle and Ninth, and Seventh and Second Avenue. There is a large parking lot immediately adjacent to the Municipal Auditorium. Every hotel

in the city either has its own garage or parking lot or has connections with these facilities very close to the hotel.

Planes can be landed at the following airports: Crystal Airport, Flying Cloud, and Anoka. All of them have tie-down facilities. The fee will probably be nothing but at most 50 cents per night.

Message from the Chairman of the Committee on Women's Activities

We hope you are coming to the AVMA meeting in Minneapolis next month. We are looking forward to greeting old friends and making new ones. Our committees have been working to make your visit here an enjoyable one. Entertainment has been planned for the entire family.



Mrs. R. A. Merrill, General Chairman

Minneapolis and its sister city across the river, St. Paul, have much to offer visitors. Saint Paul is our capital city and the home of our new School of Veterinary Medicine, which is a part of the Institute of Agriculture. Minneapolis has a magnificent system of parks, lakes, and boulevards, art galleries and museums, and the main campus of the University of Minnesota is located there. The Museum of Natural History on the campus is well worth a visit. Most visitors to Minneapolis go to

see Minnehaha Falls, made famous by Longfellow's poem.

We hope after the meeting you will vacation in our state. Our lakes and north country are famous resort areas and every type of summer activity or sport can be enjoyed there. If you plan to stay at a resort, we urge you to make reservations. August is a popular vacation time and the better places are reserved ahead. Write to the Minnesota Tourist Bureau, State Capitol, St. Paul 1, Minn., for further information.

The Curtis Hotel is Auxiliary headquarters. All of the meetings and some of the social functions will be held there. Our Tea and Reception will be Monday afternoon at the Curtis. The luncheon will be at the Radisson Hotel on Tuesday. Because of the large number expected, the luncheon will be served in two rooms and afterward the tables removed and everyone seated in the ballroom for the program and style show. The alumni dinners will be held at several of the larger hotels on Wednesday evening, with the President's Reception and Dance following.

We are making plans for a special showing of "Cinerama" to be given Tuesday afternoon after the luncheon. The theater is directly across the street from the Radisson Hotel. Tickets will be available for \$1.25 on the "first come, first served basis" as the theater will not accommodate our entire group. We also hope to offer a choice of places to visit Wednesday afternoon with transportation the only cost; tickets will be sold when you make your choice at the women's registration table.

The children have not been forgotten, and entertainment for the teenagers and sub-teens has been planned.

If we have our usual summer weather, August will be warm and cottons are most comfortable. If we have cloudy, cool days a light wrap will be



Mrs. D. B. Palmer, Secretary (left); Mrs. W. L. Boyd, Vice-Chairman; and Mrs. Henry Schwermann, Co-Vice-Chairman

necessary. If you plan a trip into our northern resort country, warmer clothing will be needed.

Our Auxiliary is especially glad to welcome you to the AVMA meeting this year. Our Auxiliary is 20 years old in August, and many of our charter members will be on hand to greet you. The State Veterinary Medical Society, in true Minnesota fashion, invites you to coffee in honor of our birthday. Coffee will be served in the East Room

of the Curtis on Wednesday, August 17, beginning at 8:30 a.m. and ending when our annual business meeting is called to order.

We invite you all to come to Minneapolis for the AVMA convention in August, and we will do our best to see that you have an enjoyable time. *s/(Mrs. R. A.) Alice Merrill, General Chairman, Committee on Women's Activities.*

Women's Activities

Mrs. R. A. Merrill, General Chairman

Mrs. W. L. Boyd, Vice-Chairman

Mrs. Henry Schwermann, Co-Vice-Chairman

Mrs. D. B. Palmer, Secretary

Hospitality

Mrs. Paul Nelson, Chairman

Mrs. L. R. Phipps, Co-Chairman

Mrs. J. M. Alexander

Mrs. M. K. Anderson

Mrs. Ralph Bergman

Mrs. G. V. Chapin

Mrs. Paul Cox

Mrs. Wm. C. Cullen

Mrs. P. C. Enge

Mrs. R. E. Erkel

Mrs. E. G. Hughes

Mrs. D. P. Jacobs

Mrs. Stanley Jepson

Mrs. P. C. Johnson

Mrs. Stanley King

Mrs. Wayne Klein

Mrs. C. E. Krosch

Mrs. L. D. Mersch

Mrs. G. W. Mittelstad

Mrs. A. B. Morgan

Mrs. P. M. Penticuff

Mrs. Walter N. Peterson

Mrs. B. J. Porter

Mrs. Lee Railsback

Mrs. H. H. Rohwer

Mrs. L. L. Shane

Mrs. D. S. Steele

Mrs. Guy Van Duzee

Mrs. R. E. Vollmar

Mrs. W. W. White

Mrs. W. F. Williams

Reception and Tea

Mrs. H. C. H. Kernkamp, Chairman

Mrs. B. S. Pomeroy, Co-Chairman

Mrs. H. C. Butler

Mrs. V. L. Dahl

Mrs. C. P. Fitch

Mrs. J. M. Higbee

Mrs. L. A. Holmgren

Mrs. H. E. Meyer

Mrs. D. R. Philp

Mrs. Paul Pinkert

Mrs. R. W. Rieke

Mrs. R. L. West

Registration and Information

Mrs. D. R. Trump, Chairman

Mrs. J. N. Karcher, Co-Chairman

Mrs. L. T. Christenson

Mrs. D. K. Christian

Mrs. O. E. Dovre

Mrs. J. C. Dunnewald

Mrs. F. C. Driver

Mrs. O. B. Gochnauer

Mrs. Walter B. Haugo

Mrs. D. F. Knippling

Mrs. E. J. McCausland

Mrs. Richard Palmer

Mrs. A. W. Pennings

Mrs. R. G. Peterson

Mrs. G. Pollman

Mrs. N. A. Roettiger

Mrs. A. J. Schladweiler

Mrs. C. E. Schrafel

Mrs. Glen Schubert

Mrs. Dale Sorenson

Mrs. Don Watt

Mrs. Leo A. Zehrer

Luncheon

Mrs. C. F. Schlotthauer, Chairman

Mrs. George Jacobi, Co-Chairman

Mrs. W. G. Butson

Mrs. Walter Carey

Mrs. Paul Eder

Mrs. Wm. F. Flanary

Mrs. Karl Knoche

Mrs. J. R. Krohn

Mrs. Alan Morrow

Mrs. L. S. Nelson

Mrs. A. C. Spannaus

Mrs. W. T. S. Thorp

Mrs. C. H. Wetter

Mrs. Paul Zollman

Teenagers' Committee

Mrs. E. H. Gloss, Chairman

Mrs. W. G. Andberg, Co-Chairman

Mrs. R. W. Bakke

Mrs. W. A. Bohan

Mrs. T. R. Eliason

Mrs. E. H. Enge

Mrs. A. O. Garlie

Mrs. Fred W. Gehrmann

Mrs. H. H. Kanning

Mrs. R. L. Kitchell

Mrs. R. S. Kufrin

Mrs. L. H. Pint

Mrs. C. P. Schmidt

Mrs. A. O. Severson

Mrs. W. B. Thurber

Mrs. R. J. Tobola

Junior Committee

Judy Karcher, Chairman

Terry Enge

Robert Gloss

David Hartle

Patty Hughes

Robert Mersch

Barbara Nelson

Rose Ellen Schwermann

Sub-Teenagers' Committee

Mrs. J. P. Arnold, Chairman

Mrs. H. H. Hoyt, Co-Chairman

Mrs. A. P. Antroinen

Mrs. J. L. Cavanaugh

Mrs. B. G. Cherry

Mrs. L. D. Cherry

Mrs. A. J. Eckstein

Mrs. P. C. Enge

Mrs. O. P. Idsvoog

Mrs. W. J. Mackey

Mrs. A. B. Magnusson

Mrs. L. A. Moen

Mrs. Glen H. Nelson

Mrs. Vern Olson

Mrs. M. J. Palmer

Mrs. R. A. Pinkert

Mrs. Robert Pyle

Mrs. D. N. Scarr

Mrs. A. O. H. Setzepfandt

Mrs. Don Spangler

**Message from the President
of the Women's Auxiliary**

As friends took leave of each other in Seattle after a stimulating meeting in the Pacific Northwest, the parting most often heard was, "See you



Mrs. L. R. Richardson

next year in Minneapolis!" Now that time of anticipation has arrived and we are thinking of the storied land of Minnehaha and the "sky blue waters."

Many committees have been working on interesting plans for varied entertainment for the entire family. Sub-teens and teenagers both have a full schedule of activities, so the mothers can attend their sessions without concern for the whereabouts of their children.

Your officers have been promoting Auxiliary projects throughout the year and will have reports of their progress. The delegates to the house of representatives will have an important session to which all women are invited. The thirty-eighth annual business meeting will be held the following day and I urge all of you to attend this meeting, as well as the joint installation of officers on Thursday the last day of the convention.

Balancing our business sessions are many delightful affairs planned for your entertainment. So, won't you come and join the women who are active in the future of the Auxiliary, whose first interest is advancing the standing of your husband's profession? At the same time, you will meet old acquaintances, make new friends, and have a wonderful vacation!

s/(Mrs. L. R.) Mildred K. Richardson, President.

• • •

Women's Auxiliary Officers

President—Mrs. L. R. Richardson, Ravenna, Ohio.
 President-Elect—Mrs. E. N. Moore, Wooster, Ohio.
 First Vice-President—Mrs. A. E. Coombs, Skowhegan, Maine.
 Second Vice-President—Mrs. L. H. Moe, Stillwater, Okla.
 Third Vice-President—Mrs. E. A. Woelffer, Oconomowoc, Wis.
 Secretary—Mrs. F. R. Booth, Elkhart, Ind.
 Membership Secretary—Mrs. C. M. Rodgers, Blandinsville, Ill.
 Treasurer—Mrs. J. D. Stevens, Sequim, Wash.
 Recorder—Mrs. R. W. Gold, Salt Lake City, Utah.
 Retiring President—Mrs. R. A. Runnels, East Lansing, Mich.

Sub-Teenagers' Program

Monday, August 15

1:30 p.m. to 5:00 p.m. Trip to Movies.

Tuesday, August 16

9:30 a.m. to 4:15 p.m. Trip to Loring Park for supervised games, handi-work, lunch, and rest periods.

Wednesday, August 17

8:30 a.m. to 4:15 p.m. Trip to Loring Park for supervised games, handi-work, lunch, and rest periods.

All buses leave from, and return to, Minneapolis Auditorium.

Women's Program

Saturday, August 13

9:00 a.m. Budget Committee, Women's Auxiliary — *Moroccan Room, Curtis Hotel.*

Sunday, August 14

Executive Board Meeting, Women's Auxiliary, *Moroccan Room, Curtis Hotel.*

10:00 a.m. Registration Opens — *Auditorium.*

Monday, August 15

8:30 a.m. Registration — *Auditorium.*

8:30 a.m. Visit Commercial and Educational Exhibits — *Auditorium.*

9:00 a.m. Attend Opening Session of the AVMA — *Main Arena, Auditorium.*

3:00 p.m.

to

5:00 p.m. Women's Tea and Reception — *East Room, Curtis Hotel.*

Tuesday, August 16

8:30 a.m. Check on Credentials of Auxiliary Representatives — *East Room, Curtis Hotel.*

9:00 a.m. House of Representatives, Women's Auxiliary (all interested women are invited) — *East Room, Curtis Hotel.*

12:30 p.m. Annual Luncheon of Women's Auxiliary — *Grand Ballroom, Radisson Hotel.*

Wednesday, August 17

8:30 a.m. Birthday Coffee Party — *East Room, Curtis Hotel.*

9:00 a.m. Annual Meeting of Women's Auxiliary — *East Room, Curtis Hotel.*

1:00 p.m. This afternoon is open for individual choices.

2:00 p.m. Meeting of Presidents and Secretaries of Affiliated Auxiliaries (all interested women are invited) — *Evergreen Room, Curtis Hotel.*

6:30 p.m. Alumni Dinners — See bulletin board.

9:00 p.m. President's Reception and Dance — *Radisson and Nicolett Hotels.*

Thursday, August 18

9:00 a.m. Closing Meeting of Executive Board of Women's Auxiliary — *Vermilion Room, Curtis Hotel.*

12:00 noon Closing Session of the AVMA Ninety-Second Annual Meeting — *Main Arena, Auditorium.*

(Installation of AVMA officers and Women's Auxiliary officers.)

Teenagers' Program

Monday, August 15

2:00 p.m. to 5:00 p.m. Dance Party — *Normandy Hotel.*
(Dance instructions from Fred Astaire Studio)

Tuesday, August 16

9:30 a.m. to 3:30 p.m. Conducted tour of the Ford Motors Plant; Luncheon and boat ride on Lake Minnetonka; and Tour of Excelsior Amusement Park.

Wednesday, August 17

1:30 p.m. Splash Party.

AVMA Group Conferences and Meetings of Other Organizations

(All meetings will be held in the Radisson Hotel unless otherwise indicated)

Sunday, August 14

9:30 a.m. Pre-Convention Conference on Veterinary Medical Examination and Licensure—*Gold Room*.
 12:30 p.m. Pre-Convention Conference Luncheon—*Junior Ballroom*.
 1:30 p.m. Association of Deans of American Colleges of Veterinary Medicine—*Room 329*.
 2:00 p.m. American Society of Veterinary Physiologists and Pharmacologists—*Room 118*.
 2:00 p.m. Motion Picture Workshop Clinic—*Admiral Room*.
 4:00 p.m. National Society of Phi Zeta—*Spanish Room*.
 6:30 p.m. Meeting of Delegates of the Student Chapters and Auxiliaries—*Italian Room*.
 6:30 p.m. American Veterinary Exhibitors Association, Inc.—*Junior Ballroom*.
 6:30 p.m. Conference of Public Health Veterinarians—*Room 118*.

Monday, August 15

12:00 noon Women's Veterinary Medical Association—*Room 118*.
 12:00 noon American Animal Hospital Association—*Gold Room*.
 4:30 p.m. Conference of Veterinary Parasitologists—*Italian A Room*.
 4:30 p.m. Conference of Zoo Veterinarians—*Room 118*.
 4:30 p.m. Veterinary Care of Laboratory Animals—*Du Bonnet Room, Leamington Hotel*.
 4:30 p.m. American Veterinary Radiology Society—*Admiral Room*.
 4:30 p.m. American Association of Veterinary Nutritionists—*Spanish Room*.
 4:30 p.m. American College of Veterinary Pathologists—*Italian B Room*.
 4:30 p.m. American Boards of Veterinary Medical Examiners—*Jade Room, Leamington Hotel*.
 7:00 p.m. American Board of Veterinary Public Health—*Du Bonnet Room, Leamington Hotel*.
 7:30 p.m. American Veterinary Radiology Society—*Admiral Room*.
 7:30 p.m. National Association of Federal Veterinarians—*Gold Room*.
 7:30 p.m. Wisconsin Veterinary Medical Association—*Junior Ballroom*.
 7:30 p.m. National Assembly of Chief Livestock Sanitary Officials—*Room 118*.
 7:30 p.m. Conference of Editors—*Spanish Room*.
 7:30 p.m. Conference of Veterinary Parasitologists—*Italian A Room*.
 8:00 p.m. American College of Veterinary Pathologists—*Italian B Room*.
 8:00 p.m. National Board of Veterinary Medical Examiners—*Room 115*.

Tuesday, August 16

9:00 a.m. Conference of Army and Air Force Veterinary Officers—*Spanish Room*.
 12:00 noon American Association of Veterinary Anatomists—*Jade Room, Leamington Hotel*.
 4:30 p.m. Conference of Extension Veterinarians—*Room 118*.
 5:00 p.m. Industrial Veterinarians Association—*Admiral Room*.

Wednesday, August 17

9:00 a.m. Conference of Federal Veterinarians—*Junior Ballroom*.
 1:30 p.m. Conference of State and Federal Livestock Sanitary Officials—*Junior Ballroom*.

Pre-Convention Conference
on
Veterinary Medical Examination and Licensure

Gold Room, Hotel Radisson

Minneapolis—Sunday, August 14, 1955

Chairman—C. W. Bower, President, National Board of Veterinary Medical Examiners.

Secretary—J. G. Hardenbergh, Secretary-Treasurer, National Board of Veterinary Medical Examiners.

9:30 a.m. Conference Registration.
10:00 a.m. Coffee and Donuts (Compliments of the AVMA).
10:05 a.m. Welcome—A. H. Quin, President, AVMA.
10:20 a.m. The Background and Purposes of Professional Licensure.
 C. W. Bower, Topeka, Kan.
10:35 a.m. The National Board of Veterinary Medical Examiners: Origin and Current Operation.
 W. R. Krill, Columbus, Ohio.
10:50 a.m. Discussion and questions.
10:50 a.m. Current Trends in Evaluation of Professional Competence.
 Shailer Peterson, Chicago, Ill.
11:10 a.m. An Appraisal of Objective Testing.
 Lillian D. Long, New York, N. Y.
11:40 a.m. Discussion and Questions.
12:00 noon The AVMA Academic Standards Board.
 H. E. Kingman, Jr., Chicago, Ill.
12:15 p.m. Discussion and Questions.
12:30 p.m. Conference Luncheon (Tickets—\$2.00)—*Junior Ballroom*.
1:30 p.m. Speaker: *Dean F. Smiley, M.D., Chicago, Ill.*
2:00 p.m. The Place of Oral and Practical Tests in State Board Examinations.
 Leonard J. Goss, New York, N. Y.
2:15 p.m. Discussion and Questions.
2:30 p.m. The Use of Objective Tests in Veterinary Medical Education.
 L. C. Payne, Ames, Iowa.
2:45 p.m. The National Board's Objective Examination:
 a) Its Development and Construction.
 Alexander Zeissig, Rabway, N. J.
 b) Experience with Its Use in Three States:
 G. K. Cooke, Berkeley, Calif.
 Jean V. Smith, Hartford, Conn.
 C. W. Bower, Topeka, Kan.
3:45 p.m. General Discussion
 W. T. S. Thorp, Moderator, St. Paul, Minn.
4:00 p.m. Summation
 C. W. Bower
 J. G. Hardenbergh
4:30 p.m. Demonstration of Objective Test in Veterinary Medicine—
 (Audience Participation).
5:00 p.m. Adjournment.

General Convention Entertainment— Minneapolis

Monday, August 15, 1:00 p.m.—AVMA Golf Tournament, Minneapolis Golf and Country Club.
 Monday Night, August 15—Open for individual activity.
 Tuesday, August 16, Matinee—Cinerama. Reservations limited to 1,100 persons.
 Tuesday, August 16, 8:00 p.m.—Ice Show and Pop Concert—St. Paul Auditorium.
 Wednesday, August 17, 6:30 p.m.—Alumni Dinners.
 Wednesday, August 17, 9:00 p.m.—President's Reception and Dance, plus Special Entertainment—Radisson and Nicollet Hotels.

The Pre-Convention Conference

There will be an all-day conference on the subject of "Veterinary Medical Examination and Licensure" on Sunday, August 14, beginning at 9:30 a.m. in the Gold Room of the Hotel Radisson. The conference program, which appears on page 15, will be of special interest to members of veterinary medical examining boards, the deans and other members of the faculties of veterinary colleges, and constituent association secretaries. All interested veterinarians are invited to attend.

Golf Tournament—Women Invited

The golf tournament will be held at the Minneapolis Golf and Country Club on Monday, August 15, with teeing-off time at 1:00 p.m. This golf course, located in a beautiful suburban area of Minneapolis, was the site of the National Amateur Golf Tournament in 1951.

Numerous prizes will be awarded, including a

trophy for the state or provincial two-man cup team; individual champion for low gross and low net; exhibitors division; student division; and for the most honest golfer. Additional prizes will be given for the longest drive on certain holes and nearest to the pin on short holes.

This year, we would like to invite the women to participate and try their luck and skill along with the men. The women will also be eligible for the awards.

Secretaries of the state organizations will submit the entry of the two-man teams by July 15 to Dr. D. S. Steele, chairman of the Golf Committee, 1332 Marshall St., N.E., Minneapolis, Minn. All individuals should also submit their names to Dr. Steele.

Charges for this activity will be \$6.00 which includes transportation and green fees; or \$10.00 which includes transportation, green fees, and dinner after the tournament, at which awards will be presented. Buses will leave the Curtis Hotel at 12:30 p.m. So be there and bring your wife.



The Minneapolis Golf and Country Club where the AVMA golf tournament will be held.

Opening Session

Main Arena—Auditorium

Monday, August 15, 9:00 a.m.

Music.

9:30 a.m.

Call to Order—President A. H. Quin.

Invocation—The Reverend R. J. Rice, D.D., Hennepin Avenue Methodist Episcopal Church, Minneapolis, Minn.

The National Anthem.

Address of Welcome—The Honorable Orville L. Freeman, Governor of Minnesota.

Response—Dr. H. C. H. Kernkamp, St. Paul, Minn.

Greetings from Women's Auxiliary.—Mrs. L. R. Richardson, President, Ravenna, Ohio.

Address—Dr. A. H. Quin, President.

Presentation of Awards

By Dr. W. A. Young, *Chairman*, Special Committee on Humane Act

Award:

1955 Humane Act Award.

By Dr. A. H. Quin, *Chairman ex officio*, Committee on Awards:

Twelfth International Veterinary Congress Prize.

Borden Award for 1955.

AVMA Award.

Address—Dr. Charles W. Mayo, Mayo Clinic, Rochester, Minn.

Nomination of Officers^{*}

^{*}If a ballot election is required (due to having more than one nomination for the respective offices), polls will be set up in the executive secretary's office in the Auditorium on Tuesday, August 16.

Officers to be elected at Minneapolis are: president-elect, five vice-presidents, and treasurer. There will be joint installation ceremonies for AVMA and Auxiliary officers at the Closing Session on Thursday, August 18.

Closing Session

Main Arena—Auditorium

Thursday, August 18, 12:00 noon

Call to Order—President A. H. Quin.

Presentation of Awards:

By Dr. S. F. Scheidy, *Chairman*, Executive Board:

Gold Key to Incoming President—Dr. Floyd Cross.

Service Scroll to Retiring President—Dr. A. H. Quin.

Installation—AVMA Officers and Women's Auxiliary Officers.

Adjournment.



J. L. McAuliff, Cortland, N. Y.
Chairman

Section on General Practice

Monday, August 15, 1:15 p.m.

Main Arena, Auditorium

First Session

1:15 (1) Postparturient Albuminuria.
A. F. Sellers, A. F. Weber, J. H. Sautter, St. Paul, Minn., and W. R. Pritchard, Lafayette, Ind.
 Opening Remarks by Chairman.
 Report of Secretary.

1:35 (2) Television—Dwarfism in Beef Cattle.
M. A. Emerson and L. N. Hazel, Ames, Iowa.

1:55 (3) The Mucosal Diseases of Cattle—Epizootiology, Symptomatology, and Experimental Studies.
W. R. Pritchard, Lafayette, Ind.

2:15 (4) Television—Necropsy Techniques:
 Swine—General Necropsy Procedures.
S. H. McNutt, Madison, Wis.
 Necropsy Procedure for Ruminants.
W. J. Hadlow, Hamilton, Mont.

2:30 (5) Primary Indigestion in Ruminants.
F. H. Fox, Ithaca, N.Y.

2:50 (6) Television—Nonsurgical Removal of Foreign Bodies with a Magnet.
J. A. Muffly, Lewisburg, Pa.

3:00 (7) Inherited Developmental Defects in Cattle.
J. P. W. Gilman, Guelph, Ont.

3:20 (8) Television—Amplification of Normal and Abnormal Heart and Lung Sounds with Discussion of the Physiological Basis for These Sounds.
H. H. Hoyt and A. F. Sellers, St. Paul, Minn.

3:25 (9) Lameness in Horses.
D. L. Proctor, Lexington, Ky.

3:55 (10) Television—Bovine Restraint.
D. E. Trump and C. F. Parker, Owatonna, Minn.

4:05 (11) It Takes More than Treatment to Control Mastitis.
H. G. Hodges, Ithaca, N. Y.

4:20 (12) Television—Prevention, Diagnosis, and Treatment of Bovine Mastitis.
D. T. Baker, Ithaca, N. Y.
 Adjournment at 4:35 p.m.

Section on General Practice

Tuesday, August 16, 8:45 a.m.

Main Arena, Auditorium

Second Session



D. K. Sorenson, St. Paul, Minn., Secretary

8:45 Motion Picture—Edema Disease in Swine.

9:00 (13) Salt Poisoning in Swine.
D. L. T. Smith, Guelph, Ont.

9:20 (14) Television—Dental Examination of Cattle.
C. W. Burch, Madison, Wis., and R. D. Hatch, Urbana, Ill.

9:30 (15) Virus Pneumonia in Swine.
J. S. Fulton, Saskatoon, Sask.

9:50 (16) Television—Supportive Feeding of Cattle.
L. L. Otteson, Waukon, Wis., and Rolandene Paulisch, Brodhead, Wis.

Appointment of Nominating Committee.

10:00 (17) Parakeratosis in Swine.
H. C. H. Kernkamp, H. H. Hoyt, D. K. Sorenson, and J. H. Sautter, St. Paul, Minn.

10:20 (18) Television (jointly with Research)—A Simplified Method of Procuring Baby Pigs by Hysterotomy.
A. B. Hoerlein, Lincoln, Neb.
Narrator—Carl Olson, Jr., Lincoln, Neb.

10:40 (19) Diseases of the Newborn Calf.
H. E. Amstutz, Columbus, Ohio.

11:00 (20) Television—Present Status of the Bovine Tuberculosis Program—Injection Technique and Reactions.
A. F. Ranney, Washington, D. C., and R. H. Bergman, St. Paul, Minn.
Narrator—Asa Winter, Washington, D. C.

11:15 (21) Panel on Organized Animal Disease Regulatory Agencies and Their Relationship to the Practitioner.
Moderator—R. L. West, St. Paul, Minn.
R. W. Smith, Concord, N. H.
H. F. Wilkins, Helena, Mont.
F. B. Wheeler, Baton Rouge, La.

Adjournment at 12:15 noon.

(Continued on page 30)



G. A. Young, Lincoln, Neb., Chairman

Section on Research

Monday, August 15, 1:25 p.m.

West Hall, Auditorium

First Session

1:25 Opening Remarks by Chairman.
Report of Secretary.

1:30 (29) Infections with Mixed Etiology.
Carl Olson, Jr., Lincoln, Neb.

1:50 (30) Studies of Hormonal-Nutritional Interactions.
Joseph Meites, East Lansing, Mich.

2:10 (31) Studies on the Experimental Production of Swine Erysipelas.
H. C. Rowsell, Guelph, Ont.

2:30 (32) Television—The Uses of Radioisotopes in Veterinary Research.
B. F. Trum, W. T. Carr, and J. N. Shively, Oak Ridge, Tenn.

2:50 (33) Induced Variations in the Virus of Hog Cholera.
H. W. Dunne, C. L. Reich, J. F. Hokanson, and E. S. Lindstrom, University Park, Pa.

3:10 (34) Present-Day Trends in Anthelmintics for Swine.
F. D. Enzie and M. L. Colglazier, Beltsville, Md.

3:30 (35) The Effect of the Sow's Ration on the Hematology of the Newborn Pig.
M. J. Swenson, D. D. Goetsch, and G. K. L. Underbjerg, Manhattan, Kan.

3:50 (36) Symposium on Leptospirosis:
The Economic Significance of Leptospirosis in Domestic Animals.
E. V. Morse, Madison, Wis.
The Incidence and Clinical Aspects of Leptospirosis in Cattle and Swine in Ohio.
E. H. Bobl, Columbus, Ohio.
The Use of Vaccine in the Control of Leptospirosis in Cattle and Swine.
C. J. York, R. V. Johnston, and V. B. Robinson, Indianapolis, Ind.
Application of Serology to the Diagnosis of Leptospirosis.
H. G. Stoenner, Hamilton, Mont.

Adjournment at 4:45 p.m.

Section on Research

Tuesday, August 16, 8:45 a.m.

West Hall, Auditorium

Second Session



L. C. Ferguson, Wooster, Ohio, Secretary

8:45 Motion Picture—Pudendal Nerve Block in the Bull.
Robert Getty and John Bowne, Ames, Iowa.

9:00 (37) Neurological Factors in the Sexual Behavior of Domestic Animals.
R. L. Kitchell, B. Campbell, L. L. Larson, St. Paul, Minn., and T. A. Quilliam, London, England.

9:20 (38) Listeriosis—Factors in Immunity and Pathogenesis.
J. W. Osebold and Mary T. Sawyer, Davis, Calif.

9:40 (39) The Pathology of Chronic Bovine Fluorosis.
J. L. Shupe, Wayne Biuus, M. L. Miner, D. A. Greenwood, H. M. Nielsen, L. A. Harris, G. Q. Bateman, and G. E. Stoddard, Logan, Utah.

10:00 (40) The Pathology of Rinderpest.
F. D. Maurer, T. C. Jones, B. Easterday, and D. DeTrey, Washington, D. C.

10:20 (41) Television (jointly with General Practice)—A Simplified Method of Procuring Baby Pigs by Hysterotomy.
A. B. Hoerlein, Lincoln, Neb.
Narrator—Carl Olson, Jr., Lincoln, Neb.

10:45 Nominations for Section Officers

10:45 (42) Some Epizootiological Aspects of Eastern Equine Encephalomyelitis in Ring-Necked Pheasants.
Preston Holden, Atlanta, Ga.

11:05 (43) Immunity to Challenge of Horses Vaccinated Against the Virus of Japanese Equine Encephalomyelitis.
K. F. Burns, Fort Sam Houston, Texas.

11:25 (44) Maintenance of a Colony of Tuberculous Monkeys.
B. D. Fremming, R. E. Benson, R. J. Young, R. E. Nye, and W. E. Smith, Austin, Texas.

11:45 (45) Field Investigations of Prophylaxis Against Epizootic Distemper in Arctic Sled Dogs.
K. R. Reinhard, R. W. Rausch, Anchorage, Alaska, and W. J. Halloway, Hamilton, Mont.

Adjournment at 12:00 noon.



J. O. Knowles, Miami, Fla., Chairman

Section on Small Animals

Tuesday, August 16, 1:15 p.m.

Main Arena, Auditorium

First Session

1:15 (46) Diseases and Parasites of Chinchillas.
J. R. Gorham and R. K. Farrell, Pullman, Wash.
 Opening Remarks by Chairman.
 Report of Secretary.

1:40 (47) The Prostate Gland in the Dog.
C. F. Schlotthauer, Rochester, Minn.

2:00 (48) Television—Canine Prostatectomy.
James Archibald, Guelph, Ont., and William Medway, Ithaca, N. Y.
 Narrator—*W. W. Armistead, College Station, Texas.*

2:20 (49) Feline Infectious Anemia—Diagnosis and Treatment.
J. C. Flint and D. H. McKelvie, Salt Lake City, Utah.

2:40 (50) Television—Surgical Repair of Glaucoma.
H. E. Jensen, Cleveland, Ohio.
 Narrator—*W. W. Armistead, College Station, Texas.*

3:00 (51) A Discussion of Distemper Vaccination Failures.
G. B. Schnelle, Boston, Mass.

3:20 (52) Television—Radiology of the Alimentary System Employing Single and Double Contrast Techniques.
N. B. Tennille and W. H. Krull, Stillwater, Okla.
 Narrator—*W. W. Armistead, College Station, Texas.*

3:40 (53) Pharmacology of Balanced Anesthesia.
F. J. Kingma, Columbus, Ohio.

4:00 (54) Television—Unusual Methods of Fracture Repair.
Jacques Jenny, Philadelphia, Pa.
 Narrator—*W. W. Armistead, College Station, Texas.*

4:20 (55) Television—Panel on Techniques, Practice Aids, and Gadgets.
 Moderator—*W. H. Riser, Skokie, Ill.*
D. S. Steele, Minneapolis, Minn.
K. W. Smith, Sioux City, Iowa.

Adjournment at 4:45 p.m.

Section on Small Animals

Wednesday, August 17, 8:40 a.m.

Main Arena, Auditorium

Second Session



G. W. Mather, St. Paul, Minn., Secretary

8:40 (56) Motion Picture—Surgery of the Lens of the Canine Eye.
H. D. Simpson and Albert Anderson, Ames, Iowa.

9:20 (57) Physiology of Fracture Healing and Fracture Pathology.
E. Harvey O'Phelan, Minneapolis, Minn.

9:40 (58) Television—The Use of Bone Plates in Certain Fractures of the Long Bones in Small Animal Surgery.
B. J. Porter and Walter Bonnett, Minneapolis, Minn.
Narrator—W. W. Armistead, College Station, Texas.

9:55 (59) Clinical Observations of Stifle Lameness in Dogs.
E. J. Catcott, Columbus, Ohio.

10:15 (60) Television—Surgery of the Canine Knee.
R. L. Rudy, Columbus, Ohio.
Narrator—W. W. Armistead, College Station, Texas.

10:30 (61) Television (jointly with Poultry)—"Strictly for the Birds."
Alan Bachrach, Philadelphia, Pa.
Appointment of Nominating Committee.

10:55 (62) The Clinical Aspects of Osteomyelitis in Small Animals.
W. O. Brinker, East Lansing, Mich.

11:15 (63) Television—Clinical Evaluation of Foreleg Paralysis.
M. W. Allam, Philadelphia, Pa.

11:30 (64) Hepatic Function.
J. L. Bollman, Rochester, Minn.
Adjournment at 12:00 noon.

(Continued on page 31)



E. E. Jones, San Gabriel, Calif.,
Chairman

Section on Poultry

Tuesday, August 16, 1:30 p.m.

West Hall, Auditorium

First Session

1:30 Opening Remarks by Chairman.
Report of Secretary.

1:40 (73) Ornithosis in Turkeys.
D. E. Davis and J. P. Delaplane, College Station, Texas.

2:00 (74) Bluecomb Disease of Turkeys. III. Preliminary Studies on Etiology.
J. McN. Sieburth and B. S. Pomeroy, St. Paul, Minn.

2:20 (75) The Veterinarian in Turkey Practice.
C. L. Nelson, Jewell, Iowa.

2:40 (76) Studies on Egg Transmission of the Agent of Infectious Sinusitis of Turkeys.
C. F. Mataney, B. S. Pomeroy, and O. H. Osborn, St. Paul, Minn.

3:00 Intermission.
Appointment of Nominating Committee.

3:10 (77) Significance of Serological Testing for Chronic Respiratory Disease.
E. J. Jungberr, R. E. Luginbuhl, M. Tourtellotte, and W. E. Burr, Storrs, Conn.
Discussion.
J. F. Crawley, Toronto, Ont.

3:30 (78) The Toxicity of Arasan-Treated Corn to Hens and Chicks.
E. L. Johnson, P. E. Waibel, and B. S. Pomeroy, St. Paul, Minn.

3:50 (79) Symposium on Newcastle Disease Vaccines:
Moderator—*C. A. Brandy, Madison, Wis.*
An Evaluation of the Newcastle Disease Wing-Web Vaccine.
Henry Van Roekel, Amherst, Mass.
The Present Status of Killed Vaccines in the Control of Newcastle Disease.
Julius Fabricant, Ithaca, N. Y.
The Results from Various Methods of Administering B, Newcastle Disease Vaccines.
E. P. Johnson, Blacksburg, Va.
Adjournment at 4:30 p.m.

Section on Poultry

Wednesday, August 17, 9:15 a.m.

West Hall, Auditorium



M. S. Hofstad, Ames, Iowa, Secretary

Second Session

9:15 Nominations for Section Officers.

9:20 (80) The Past, Present, and Future of Salmonella Antigens for Poultry.
J. E. Williams and A. D. MacDonald, Beltsville, Md.

9:40 (81) Progress in Pullorum Disease Eradication.
Henry Van Roekel, Amherst, Mass.

10:00 Intermission.

10:10 (82) Present Status of Infectious Bronchitis Immunization.
J. F. Crawley, Toronto, Ont.
Discussion.
S. B. Hitchner, Madison, Wis.

10:30 (83) Television (Jointly with Small Animals)—"Strictly for the Birds."
Alan Bachrach, Philadelphia, Pa.

10:50 (84) Transmission and Therapy Studies on an Agent Which Produces Arthritis in Chickens.
F. K. Wills and J. P. Delaplane, College Station, Texas.

11:10 (85) Symposium on Hemorrhagic Disease:
Moderator—J. O. Alberts, Urbana, Ill.
Studies on Hemorrhagic Disease of Chickens.
M. S. Cover and W. J. Mellen, Newark, Del.
Some Observations on the Pathology of the Hemorrhagic Condition of Chickens.
F. V. Wasbka, Rahway, N. J.
Clinical Observations on Hemorrhagic Anemic Syndrome.
H. T. Cartrite, Gonzales, Texas.

Adjournment at 12:00 noon.



T. Robert Phelps, Vancouver, Wash.,
Chairman

Section on Surgery and Obstetrics

Wednesday, August 17, 1:30 p.m.
Main Arena, Auditorium

First Session

1:30 (86) Motion Picture—Surgical Correction of Abnormalities of the Foot in Cattle.
V. L. Tharp, Columbus, Ohio.

1:45 Opening Remarks by Chairman.
 Report of Secretary.

1:50 (87) Television—Symposium on Infertility in Cattle:
Moderator—M. G. Fincber, Ithaca, N. Y.
 The Effects of Leptospirosis on Reproduction in Cattle.
H. S. Bryan, Urbana, Ill.
 Trichomoniasis.
J. L. Tborne, Logan, Utah.
 Nutrition in Bovine Infertility.
G. T. Easley, Sulphur, Okla.
 Manually Introduced Infections.
E. A. Woelffer, Oconomowoc, Wis.

2:50 (88) Motion Picture—Spastic Syndrome or "Stretches" in Cattle.
S. J. Roberts, Ithaca, N. Y.

3:10 (89) Influence of Virus Infection, Vaccination, or Both on Embryonic and Fetal Development.
G. A. Young, Lincoln, Neb.

3:30 (90) Surgical Kits for Ready Field Use by Practitioners.
R. H. Bradbury, Mount Vernon, Wash.

3:45 (91) Displacement of the Bovine Abomasum—Its Diagnosis and Surgical Correction.
G. R. Moore, East Lansing, Mich.

4:05 (92) Motion Picture—A Chemical Depilatory Procedure.
R. L. Gangarosa, Gordon, Neb.

4:15 (93) Television—Vibriosis, Its Diagnosis and Treatment in Cattle.
H. L. Easterbrook and W. N. Plastridge, Storrs, Conn.

Adjournment at 4:35 p.m.

Section on Surgery and
Obstetrics

Thursday, August 18, 9:00 a.m.
Main Arena, Auditorium

Second Session



A. R. Roseberg, Fargo, N. Dak.
Secretary

9:00 (94) Improving Large Animal Anesthesia.
L. Meyer Jones, Ames, Iowa.

9:20 (95) Television—Some Surgical Procedures of the Bovine Teat.
J. P. Arnold, St. Paul, Minn.
Narrator—D. K. Sorensen, St. Paul, Minn.

9:40 (96) Handling Cases of Retained Placenta in Cattle.
F. H. Oberst, Manhattan, Kan.

10:00 (97) Television—Anesthesia Demonstrations:
The Pudendal Nerve Block in Cattle.
L. L. Larson and Raimonds Zemjanis, St. Paul, Minn.
Narrator—R. L. Kitchell, St. Paul, Minn.
Anesthesia of the Eye and Associated Structures.
D. R. Peterson, Stillwater, Okla.
Narrator—J. D. Friend, Stillwater, Okla.
Demonstration of Paravertebral and of Lumbar Epidural Anesthesia in Cattle.
H. J. Hardenbrook, Urbana, Ill.
Narrator—L. E. St. Clair, Urbana, Ill.

Nominations for Section Officers.

10:50 (98) Treatment of Wounds in Horses.
O. W. Whitcomb, Ames, Iowa.

10:50 (99) Television—Oophorectomy (Spaying) of Range Cattle.
R. I. Port, Sundance, Wyo.
Narrator—R. A. Baldwin, Sundance, Wyo.

11:00 (100) Infertility Amenable to Hormone Therapy.
E. A. Woelffer, Oconomowoc, Wis.

11:20 (101) Television—Demonstration of a Cesarean Section in the Sow.
J. M. Higbee, Albert Lea, Minn.
Narrator—Edward Usenik, St. Paul, Minn.

Adjournment at 11:50 a.m.

The televised portions (closed-circuit) of the Section Programs are made possible by the generous support of Allied Laboratories, Inc., in cooperation with Radio Corporation of America.



C. A. Brandly, Madison, Wis., Chairman

Section on Public Health

Wednesday, August 17, 1:30 p.m.
Main Arena, Auditorium

First Session

1:30 Opening Remarks by Chairman.
Report of Secretary.

2:00 (102) Rabies in Wild and Domestic Animals in Upstate New York.
D. J. Dean, E. L. Cheatum, and F. B. Locke, Albany, N. Y.

2:25 (103) A Practitioner's Observation of Modified Live Virus Rabies Vaccine.
F. T. Candlin, Denver, Colo.

2:40 (104) Problems in the Control of Psittacosis and Ornithosis.
K. F. Meyer, San Francisco, Calif.

3:15 (105) Television—A Survey of Avian-Swine Tuberculosis and Methods for Its Control.
C. D. Lee, Ames, Iowa.

3:35 (106) Effect of Antibiotics on the Prevention and Treatment of Experimental Air-Borne Mouse Pneumonitis Virus (Psittacosis) Infections in Mice.
C. G. Loosli, Chicago, Ill.

Appointment of Nominating Committee.

3:55 (107) Panel on Health Education as Applied to Veterinary Public Health.
Moderator—*Beryl J. Roberts, Boston, Mass.*
G. W. Anderson, St. Paul, Minn.
R. K. Anderson, Denver, Colo.
A. M. McDermid, Middleton, Wis.

Adjournment at 4:45 p.m.

Section on Public Health

Thursday, August 18, 9:15 a.m.
West Hall, Auditorium

Second Session



R. L. Hummer, Montgomery, Ala.,
Secretary

9:15 (108) The Organism of Q Fever in the Milk of Dairy Cows.
J. B. Enright and W. W. Sadler, Davis, Calif.

9:35 (109) Poultry Inspection and Sanitation.
J. W. Atkinson, Washington, D. C.

9:55 (110) Symposium on Liaison Between Livestock Disease Regulatory Agencies:
Livestock Disease Regulatory Activities at the Federal Level.
C. D. Van Houweling, Washington, D. C.
The Importance of Maintaining Liaison Between the General Practitioner and a Public Health Veterinarian at the State and Federal Level.
B. H. Dean, Berkeley, Calif.
Livestock Disease Regulatory Problems Encountered by the Veterinary Practitioner.
N. J. Miller, Eaton, Colo.
Food and Drug Administration Responsibilities in Regulating the Sale and Distribution of Drugs.
J. H. Collins, Washington, D. C.

10:35 (111) Foreign Animal Diseases of Public Health Significance.
F. A. Todd, Washington, D. C.
Nominations for Section Officers.

10:55 (112) Progress in Animal Disease Reporting.
J. R. Hay, Columbus, Ohio.

11:10 (113) Present Concepts and Obligations of the Veterinarian in Quality Milk Control.
F. M. Birch, Manitowoc, Wis.

11:30 (114) Observations on Feline Ringworm Caused by *Microsporum Canis*.
R. W. Menges and Lucille K. Georg, Chamblee, Ga.

Adjournment at 11:50 a.m.

Section on General Practice—Continued from page 19

Tuesday, August 16, 1:30 p.m.

West Hall, Auditorium

Third Session

1:30 (22) Symposium on the Accelerated Brucellosis Control Program:
Review of the Nation-Wide Campaign to Eradicate Brucellosis in Domestic Animals.
A. K. Kuttler, Washington, D. C.
Adjusting State Brucellosis Programs to the Accelerated Federal Brucellosis Program.
J. R. Hay, Columbus, Ohio.
The Practitioner and the Accelerated Brucellosis Program.
R. F. Smith, Belleville, Wis.
Research and the Expanded Brucellosis Program.
H. S. Cameron, Davis, Calif.

2:15 (23) The Diagnosis and Treatment of Chemical Poisoning of Animals with Particular Reference to Insecticides.
R. D. Radcliffe and G. T. Woodard, Kerrville, Texas.

2:35 (24) Federal Cooperative Disease-Eradication Activities.
R. J. Anderson, Washington, D. C.

2:55 (25) Emphasizing Preventive Medicine in Dairy Cattle Practice.
R. W. Ormsbee, Stockton, Calif.

3:15 (26) Motion Picture—Rinderpest, Its Recognition and Control.
F. A. Todd, Washington, D. C.
Discussion.
F. D. Maurer, Washington, D. C.
Motion Picture—African Swine Fever and Its Similarity to Hog Cholera.
F. D. Maurer, Washington, D. C.
Nominations for Section Officers.

4:05 (27) Trichostrongylidosis.
J. H. Whitlock, Ithaca, N. Y.

4:30 (28) Parasite Control Programs in Preventive Medicine.
A. C. Todd, Madison, Wis.
Adjournment at 4:50 p.m.



Split Rock lighthouse on shore of Lake Superior.

Section on Small Animals—Continued from page 23

Wednesday, August 17, 1:15 p.m.

West Hall, Auditorium

Third Session

1:15 (65) Fluid Balance in Small Animal Therapy.
L. C. Payne, Ames, Iowa.

1:35 (66) Management of Kidney Disease in the Dog by the Average Clinician.
M. L. Morris, Topeka, Kan.

2:00 (67) Fundamentals of the Stress Concept.
Gaetan Jasmin and Hans Selye, Montreal, Que.

2:30 (68) Motion Picture—The Clinical Application of Oxygen.
E. P. Leonard and R. W. Kirk, Ithaca, N. Y.
Nominations for Section Officers.

3:00 (69) Bone Grafting.
Jacques Jenny, Philadelphia, Pa.

3:20 (70) Systemic Fungous Diseases of the Dog.
Raymond Fagan, Kenneth Square, Pa.

3:40 (71) Bone Marrow as a Practical Clinical Diagnostic Agent in Canine Practice.
F. W. Meier, Detroit, Mich.

4:00 (72) Panel on Management and Practice.
*Moderator—W. F. Irwin, Tulsa, Okla.
R. S. Edmonds, Princeton, N. J.
W. F. Winkler, Newport, Ky.
Kenneth Whittington, Memphis, Tenn.*

Adjournment at 4:45 p.m.



Logging on the Big Fork River in Minnesota.

The Scientific Exhibits

The scientific exhibits at the Minneapolis meeting have been furnished by several educational institutions and governmental agencies. They are located in the North Corridor on the First Floor of the Minneapolis Auditorium.

A committee will study the scientific exhibits and award certificates to the three judged to be of greatest merit.

All veterinarians are urged to visit these exhibits which are designed to portray important aspects of problems requiring the profession's attention.

Micromorphology of the Bovine Udder

*School of Veterinary Medicine, Division of Veterinary Anatomy, Veterinary Surgery, Veterinary Medicine, University of Minnesota
Booth 1*

Through the use of wax models and microphotographs, this demonstration will show the structure and fate of finer ducts and alveoli in the mammary lobule unit during the different phases of the lactation cycle.



Aerial view of St. Anthony Falls in the Mississippi River at Minneapolis, the source of power for the flour mills shown on either bank.

Leptospirosis

*School of Veterinary Medicine, Division of Pathology and Parasitology,
University of Minnesota
Booth 2*

The exhibit will show some of the growth requirements of the Leptospira organisms, their behavior under certain environmental conditions and the disease they produce. A sketch of diagnostic methods including the various techniques will be shown.

Aplastic Anemia in Cattle

*School of Veterinary Medicine, Division of Pathology and Parasitology,
University of Minnesota
Booth 3*

This display will depict the story of aplastic anemia regarding clinical features, postmortem findings, and research techniques and data.

Fascioloidiasis in Minneapolis

*School of Veterinary Medicine, Division of Pathology and Parasitology,
University of Minnesota
Booth 4*

Three panels will depict the life cycle, distribution, and pathology of *Fascioloides magna*, the large American liver fluke. Molluskan intermediate hosts for this trematode and adult forms of this helminth from natural and experimental hosts will be displayed.

Parakeratosis of Swine

*School of Veterinary Medicine, Division of Pathology and Parasitology,
University of Minnesota
Booth 5*

The display aims to show some of the principal symptoms and gross lesions that represent various stages in the clinical course of the disease. Photomicrographs illustrating the tissue alterations which characterize parakeratosis will be exhibited, along with photographs and preserved and mounted specimens.

Virus Diseases of Animals Transmissible to Man

*Department of Microbiology and Public Health, School of Veterinary Medicine, Michigan State University
Booth 6*

Transmission of certain virus diseases of animal to man emphasizes that preventive medicine and public health involve not only the means of communication but ecology of animals, birds, and vectors.

Selections from the Registry of Veterinary Pathology

*Registry of Veterinary Pathology, Armed Forces Institute of Pathology
Booth 7*

The exhibit will illustrate several important animal disease entities typical of cases from the Registry of Veterinary Pathology. Essential information necessary to establish a diagnosis is presented in an effort to stimulate the interest of the viewer and to test his diagnostic acumen. Photographs and x rays will depict the gross, microscopic, and roentgenographic findings in each disease.

National Formulary X

*American Pharmaceutical Association Washington, D.C.
Booth 8*

The exhibit will call attention to drugs included in one of the official compendia, National Formulary X. Particular emphasis will be placed on preparations used in veterinary practice. Since the N.F.X. will be released later this year, a sample copy will be available.

Be Wise to the Whys of Testing

*Professional Examination Service, American Public Health Association
Booth 9*

The exhibit will consist of consultation services regarding written objective examinations in the field of veterinary medicine. Members and consultants of the staff of the Professional Examination Service will be in daily attendance for conferences. A special attraction for visitors is sample questions in veterinary medicine. These are being given to visitors and are scored by machine and results are given to visitors immediately.

Developments in Brucellosis Research

*Department of Veterinary Science, University of Wisconsin
Booth 10*

The formula for preparation and value of the "W" *Brucella* medium will be delineated. The medium enables the quantitative recovery of *brucella* from contaminated materials.

Cortisone administration during experimental *Brucella suis* infection reduced the severity of lesions without reduction in numbers of recoverable *Brucella* and modified by persensitivity reactions.

The Care of Laboratory Animals

*Scientific Exhibits Committee, American Veterinary Medical Association
Booth 11*

The exhibit will stress the importance of budgeting for individuals with specialized training as managers of animal quarters. It will emphasize the interest that the veterinary profession has in this type of endeavor, and of our readiness to cooperate in the solution of problems that are presented to us. Pictures highlighting important recommended procedures will be presented. Leaflets listing important diseases of some common laboratory animals will be distributed. And a few animals will be on exhibit with recommended cage equipment.

International Health Organization in the Americas

*Pan American Sanitary Bureau, Regional Office of the World Health Organization
Booth 12*

Center piece showing inter-relationship of operating funds; and two sets of side panels showing photographs of operations in the field of zoonoses.

Chemical Corps Medical Laboratories

*Army Chemical Center, Maryland
Booth 13*

This exhibit illustrates the activities, facilities, and methods used to study the problems of the prevention and treatment of chemical casualties in animals and man.

The Public Health Aspects of Animal Ringworm

*Communicable Disease Center, Public Health Service, Department of Health, Education and Welfare
Booth 14*

This exhibit depicts the types of animal ringworm that are of public health importance and concerning the epizootiology and epidemiology.

The Commercial Exhibits at Minneapolis

The commercial exhibits at the Ninety-Second Annual AVMA Convention will—as always—be a colorful demonstration of the many products and technical developments which enable veterinarians to keep abreast of the times in their services to clients and patients.

Over 70 leading companies will occupy 88 booths in the Main Arena of the Minneapolis Auditorium.

The American Veterinary Exhibitors Association will again sponsor awards as part of its program of improving the exhibits feature and stimulating interest in, and inspection of, the displays. Details on how to qualify for these prizes will be distributed to registrants.

Abbott Laboratories

Booth 44

Abbott Laboratories will exhibit Seleen Suspension, a new liquid preparation for treatment in dogs of nonspecific dermatoses of obscure etiology, sometimes called summer eczema, dry eczema, and fungous infections. This preparation greatly assists in removing dead tissue scales which accumulate as a result of these skin conditions. In addition to its efficacy in these conditions and its cleansing action, Seleen will also kill fleas and lice with one application.

Aeroplast Corporation

Booth 60

The exhibit will feature Aeroderm Liquid Surgical Dressing, the plastic dressing sprayed on from an aerosol dispenser. The wide varieties of applications include teat wounds, cesarean sections, herniorrhaphies, rumenotomies, burns, abrasions, excoriation, etc. Slides and color transparencies of clinical studies will be shown. Literature and reprints are available.

Lake of the Isles in the heart of Minneapolis



Albers Milling Company — A Division of Carnation Company*Booth 63*

Exhibit of Friskies Dog Foods — Dry and Canned. F. J. Bartos, manager of Carnation Kennels, Carnation, Wash., will put on a demonstration of proper trimming and fitting of dogs for shows. He will discuss this subject with veterinarians.

Allied Laboratories, Inc., Pitman-Moore Company Division*Booth 4*

Allied Laboratories is pleased to again present to the AVMA convention a series of closed-circuit TV demonstrations in cooperation with Radio Corporation of America. The company exhibit will relate to this Fifth Anniversary of closed-circuit TV sponsorship in addition to presenting seasonal specialty products of interest to the profession.

American Cystoscope Makers, Inc.*Booths 2 and 3*

American Cystoscope Makers, Inc., extend a cordial invitation to visit their exhibit in booths 2 and 3. Precision optical endoscopes for large and small animals will be on display, in addition to plastic and woven catheters, electro-medical equipment, and accessories.

Ames Company, Inc.*Booth 61*

My-B-Den, the adenine nucleotide, adenosine-5-monophosphate, is found highly effective in the treatment of varicose vein complications, stasis, and bursitis. My-B-Den preoperatively shortens the waiting period necessitated by poor tissue condition and enhances surgical results. Decholin/Belladonna will also be shown.

Armour Veterinary Laboratories—A Division of Armour & Company*Booth 50*

The Armour exhibit will feature endocrine and enzyme specialties as follows: ACB-12 (ACTH with B-12); Adrenocillin (ACTH and penicillin); Adrenomone (ACTH); Dynamone (ACTH and glucose); F.S.H. (follicle stimulating hormone); P.L.H. (pituitary luteinizing hormone); P.O.P. (purified oxytocic principle); Tryptar-Vet (proteolytic enzyme); also, an assortment of other products.

Arnold Laboratories*Booth 23*

You are cordially invited to inspect our line of popular dispensing specialties and pharmaceuticals, including hormones. Some new and unique items for both large animal and small animal practices will be featured, as well as favorites such as Calf Scour Vitaform, Mange Treatment, and F. C. Swine Worm Powder.

Ashe Lockhart, Inc.*Booth 40*

A complete line of veterinary biological products for both large and small animals will be displayed by Ashe Lockhart, Inc., and will feature canine, feline, and lyophilized products, as well as other products of special interest to the profession. Produced by veterinarians for veterinarians.

Bilhuber-Knoll Corp.

Booth 25

Stop in and learn the new uses for old Bilhuber drugs, such as oral Metrazol therapy for old dogs, and become better acquainted with others that are less familiar to you. Also, look over the newer dosage forms including the sugar-coated Octin veterinary tablet and the "large economy size" packages of Bilhuber preparations. Or, if you prefer, just stop for a visit with Angus Moore, who will represent us.

Burgess Publishing Company

Booth 20

Practicing veterinarians, as well as teachers of veterinary medicine, will be interested in browsing through recently published material that will be on display. Representatives will be on hand to answer questions regarding mimeograph and photo-offset publishing and how these flexible methods can be applied economically to special publishing problems.

Campbell X-Ray Corporation

Booth 47

In Booth 47, the Campbell X-Ray Corporation will exhibit the X-Ray Animagraph. The Animagraph is of exclusive veterinary design and combines in one compact unit, radiography, fluoroscopy, therapy, portability, safety, and convenience.

Consolidated Products Company

Booth 56

Semi-Solid Buttermilk and Whey Products make available the health-building nutrients of milk and natural vitamins for poultry, hogs, and calves in convenient, practical form and packages. These products help fill in the nutritional gaps of present-day feeding. Kaff-A replaces whole milk for baby calves.

Coreco Research Corporation

Booth 18

The Coreco Camera is designed to photograph all surface areas of the body from 1-to-1 close-up pictures to half-body size, and all cavities of the human body such as mouth, throat, ear, nose, vagina, and rectum. The camera carries its own specially developed, fully color-corrected bulb and a mechanism for complete control of its color temperature and exposure within the camera itself. There is an automatic view finder synchronized with the automatic camera mechanism to permit viewing until a fraction of a second before exposure. The camera provides for automatic focusing.

Corn States Laboratories, Inc.

Booths 80 and 81

The exhibit of Corn States Laboratories, Inc., will consist of samples of many biological products produced by the company, including specialties; also, products of firms that we represent as distributors.

Curts Laboratories, Inc. (Formerly Curts-Folse)

Booth 1

Curts' representatives will be on hand to show and discuss our distinctive pharmaceuticals, many of which are unsurpassed in their field of usage. These include: Multi-Scour, Mastyn, Bovidote, Alkadote, Akrodin, Piggy-Lix, Geri-Lix, VitamADE, Calcinates, Diasul, Solidol, and many others.

Diamond Laboratories
Booth 73

We extend a cordial invitation to you to visit our booth. We will exhibit a line of biological products featuring D.L.V. Diamond Laboratories Modified Live Virus Hog Cholera Vaccine and Erysipelas Bacterin.

Doho Chemical Corporation
Booth 48

The Doho Chemical Corporation and its subsidiary, Mallon Chemical Corporation, are pleased to exhibit their preparations: Auralgan, for relief of pain and itching in otitis, canker, and ear mites; Otosmosan, for suppurating ears, fungous conditions, and all other forms of aural dermatomycosis; Rhinalgan, the pleasant-tasting nasal decongestant which shrinks the mucous membrane without any systemic or circulatory effect, particularly in distemper; and new Rectalgan, the liquid topical anesthesia for immediate symptomatic relief of pain and itching, in hemorrhoids and for many other uses pre- and postoperatively. All these medications are routinely used by the medical profession on infants as well as their geriatric patients.

Drug Publications, Inc.
Booth 21

The new, completely rewritten, third edition of the "Veterinary Drug Encyclopedia and Therapeutic Index" will be on display. This edition has been enlarged to almost twice the size of the original edition and contains numerous improvements and changes, including an instrument section. Products appearing for the first time in this new edition are identified. We invite your inspection and suggestions.

E. I. du Pont de Nemours & Co. (Inc.) Photo Products Dept.
Booth 14

The Du Pont exhibit will feature radiographs taken on the new "Patterson" Lightning Special X-ray Intensifying Screen. The exhibit will also display Du Pont's complete line of radiographic products—Films, Chemicals, and "Patterson" Screens.

Eisele and Company
Booth 37

Eisele and Company will display their regular line of clinical thermometers, hypodermic syringes, both the regular type and interchangeables, hypodermic needles, Eko bandages, and specialty glassware.

Encyclopedia Americana
Booth 29

We will feature our new heritage edition of "Encyclopedia Americana" representing a five-year intensive revision program, making it the most complete reference work in our 126-year history. Inspection is most cordially invited and all those registering at our booth will receive by mail a full-color 48-page "Hammond World Atlas and Gazetteer" with our compliments.

Ford Kennel Equipment
Booth 6

Ford manufactures prefabricated kennel fencing using the "patented Ford interlocking frame" and the famous five-compartment stalls; all welded construction using galvanized sheeting throughout and waterproof trays, also of galvanized metal.

Fort Dodge Laboratories, Inc.

Booths 45 and 46

On exhibit will be M-L-V, the original modified live virus hog cholera vaccine; Distohep, a combined canine distemper and infectious hepatitis vaccine (canine origin); Rabies Vaccine, a modified live virus vaccine (chicken embryo origin); Cloviven, new antibiotic-vitamin feed supplement; Soxipent, the modern preparation for treatment and control of bovine mastitis; and various other biologicals and pharmaceuticals.

Fromm Laboratories Inc.

Booth 36

Fromm Laboratories will display their quality line of biologicals. They will also introduce three new and improved biologicals. Hepatitis Vaccine, Trivalent Serum, Combination Canine Distemper and Infectious Canine Hepatitis Vaccine.

Gaines Division, General Foods Corporation

Booth 68

The Gaines Division, General Foods Corporation, will have a display of their Gaines products. Representatives will be in attendance at the exhibit to explain the many advantages of these products.

Goshen Laboratories, Inc.

Booth 8

The products of Goshen's own manufacture as well as those of Arnar-Stone, Carlton, Ciba, Fellows, Fougera, Hungerford, Medical Plastics, Micro Instrument, Modern 1st Aid, Old Tappan, Pyroxylin, Sandoz, Soluble and Virginia Smelting will be displayed.

Hamilton Pharmacal Co. Inc.

Booth 49

Hamilton Pharmacal Co. Inc. is the only company in the world devoted exclusively to research and development in the field of bovine mastitis. Research is conducted through veterinary colleges and groups of veterinarians specializing in mastitis work. Products developed will be on display and trained personnel will be available to discuss the veterinarian's individual problems.

Haver-Glover Laboratories

Booths 82 and 83

The Ninety-Second Annual Convention of the American Veterinary Medical Association will afford another opportunity for Haver-Glover representatives to greet members of the profession and to display a selection from their complete line of pharmaceutical, biological, and surgical supplies, including new and improved items. See you in Minneapolis!

Prescription Diet Department, Hill Packing Company

Booth 28

The five prescription diets will be displayed; also, the latest research releases pertaining to the use of the diets in practicing nutritional food therapy will be available.

Hill Packing Company

Booth 16

The Hill Packing Company will display Hill's Dog Food and the complete line of the other Hill's canned items and the complete line of Hill's frozen packages.

**Import-Export Dr. S. Jackson
Pharmaceutical, Diagnostic, Surgical Specialties**

Booth 27

Coeclysin, the world's only veterinary preparation containing peristaltic hormone; Orthomin, bactericidal, colloidal pole-reversing, antiallergic and gamma globulin increasing; Electromagnetic Metal Detector, brand new model with both optical and acoustical indications; Self Expanding Teat Dilator, not a tear plug but a surgical instrument; Vetafil, a new synthetic suture every veterinarian knows about; Perlon OB Ropes, superior to chains; Rumenotomy Device and Flexible Embryotome, modern instruments for the modern practitioner.

Jensen-Salsbury Laboratories, Inc.

Booths 70, 71, and 72

As a special feature this year, Jen-Sal will have, in addition to some of the newer pharmaceuticals and biologicals, a model surgery area featuring the latest in equipment and instruments. New surgical techniques of interest to both large animal and small animal practitioners will be demonstrated by men thoroughly familiar with the surgeon's need and with the latest in equipment.

Kellogg Company

Booth 51

The Kellogg Company will feature a display of packaged Gro-Pup Dog Food—Ribbon, Meal, T-Bone forms—all of which carry the AVMA-AAHA Seal of Approval as maintenance foods. A sales representative and the company nutritionist will be available at the booth.

King Research, Inc.

Booth 55

There will be on display Kore, a disinfectant, deodorant, detergent for all veterinary applications, both topically and inanimate, and Clippercide, a lubricating disinfectant and fungicide for clipper blades.

Kirschner Mfg. Co.

Booth 53

Kirschner Mfg. Co. invites all in attendance to visit our booth 53. On display will be new fracture equipment items, as well as Glass Plastic Animal Cages and the Oxygen Therapy Door.

Lederle Laboratories Division, American Cyanamid Company

Booths 87 and 88

You are cordially invited to visit our exhibit in booths 87 and 88 where you will find our representative prepared to give you the latest information on Lederle products.

The S. E. Massengill Company

Booth 11

Your are cordially invited to visit our booth where competent representatives will be glad to discuss our products for the graduate veterinarian.

Medical Coaches Incorporated

Booth 62

Will display range of mobile clinics used by the veterinary practitioner in providing higher quality of service, at lower operational cost. Latest model

Mobile Service Dispensary will be available for inspection; incorporates many new features developed as the result of experience gained by satisfied veterinarians throughout the country.

Miles Laboratories, Inc.

Booth 59

The modern formula Bactine® is ideal for a good many uses as a germicide, fungicide, antiseptic cleanser, and true deodorizer. Its dependability and safety have been confirmed by clinical study and practical use. Of real importance, Bactine is well tolerated, is exceptionally pleasant and economical to use.

Miller Surgical Company

Booth 26

See the Miller Electro-Scalpel, a portable office unit with accessories such as insulated snares, smoke ejectors, horse firing needle, etc. Also complete line of Illuminated Diagnostic Equipment, with otoscopes, ophthalmoscopes, gastrosopes, bronchoscopes, headlites, cotton forceps, vaginal speculum, and eyespud sets with magnet.

Motorola Communications & Electronics, Inc.

Booth 13

Motorola Communications & Electronics, Inc., will display a complete line of the finest in two-way radio communications equipment for veterinary application. Featured will be Motorola's new line of Twin V equipment.

The National Laboratories Corp.

Booth 66

On display will be National pharmaceuticals, Anti-Hog Cholera Serum, Hog Cholera Virus, and Affiliated Brand biologics.

Quiet and comfort are pictured here at Big Bowstring Lake in Minnesota's northland.



Nelson Laboratories*Booth 24*

Our exhibit will consist of the products of several different companies besides our own manufactured products; also, instruments and specialties.

Nicholson Manufacturing, Inc.*Booth 69*

In addition to firing irons, branding irons, cases, and other specialized instruments for the veterinarian, we will feature a new line of "Plastics for the Veterinarian"—including fiberglas kennels, do-it-yourself plastic plating, and plastic enclosures for kennel runs.

Norden Laboratories*Booths 38 and 39*

We cordially invite you to visit our exhibit where experienced Norden representatives will appreciate the opportunity of discussing with you a wide variety of new biological and pharmaceutical products. These are all backed by 36 years of sales exclusively to the veterinary profession.

Northland Veterinary Supply Co.*Booth 15*

Pharmaceutical supplies for the graduate veterinarian will be exhibited; also a few instruments for the veterinarian (syringes, extractors, needles).

Osborn Laboratories, Inc.*Booth 76*

Pharmaceuticals of our manufacture to be shown will include our most popular solutions, powders, tablets, ointments, and injectables. Several of our newer and unique dispensing-size products will be featured, along with the most recent additions to our instrument line. We shall be looking forward to seeing old friends and making new acquaintances.

Parke, Davis & Company*Booth 54*

Parke, Davis and Company welcomes you to visit our booth. We will feature Chloromycetin®, our broad-spectrum antibiotic, and Surital® Sodium, an ultra-short acting general anesthetic. Literature on these, as well as other specialties, will be available.

Pfizer Laboratories*Booths 9 and 10*

Pfizer Laboratories' booth will feature the new Tetracycline-Vet Soluble Powder for use in domestic animals including adult ruminants, feed additives, Terramix 5 and 10, and a complete line of Terramycin® dosage forms.

Professional Veterinary Service, Inc.*Booth 78*

Premier presentation of a complete line of inhalation therapy for both small and large animals includes completely new line of respirators, resuscitators, oxygen tents, catheters, masks, and ether units; demonstration of Dr. Knowles' small animal equipment and Dr. Reed's newly designed large animal masks and equipment.

Quaker Oats Company

Booth 7

This exhibit will carry the complete line of dog foods manufactured by the Ken-L-Products Division of the Quaker Oats Company, which includes Ken-L-Ration, Ken-L-Biskit, Ken-L-Meal, and Chappel Horse Meat.

Ralston Purina Company

Booth 19

Full-color photo review of Purina Research in our laboratory, at our research farms and units, and in the manufacturing processes. Continuation of our advertising theme Nutrition Is Our Business will be stressed as we show the part our industry is playing in making animal agriculture more profitable.

Ranger Products Company

Booths 84 and 85

The Ranger Portable Cattle and Hog Chute will be demonstrated continuously. Motion pictures of hoof trimming and various uses of the chute will be shown. Other equipment, such as the automatic Hog Holder, Electric Hoof Shaper, and Economy Instrument Cabinets, will be displayed.

Research Laboratories, Inc.

Booth 17

Research Laboratories' complete pharmaceutical and biological line is featured in an attractive, indirectly lighted display. RL Brand Modified Live Virus Hog Cholera Vaccine, Erysin RL, Killed Culture Erysipelas Bacterin, Canine Distemper Vaccine, Infectious Canine Hepatitis Vaccine, and Rabies Vaccine (chicken embryo origin) are some of the leading biologicals featured.

Ridge Associates

Booth 75

Ridge Associates will exhibit and demonstrate the Retiscope model RA-10. This is the first instrument designed specifically for detecting ferrous metal in the stomachs of cattle using ultra-sensitive electronic circuitry. The portable RA-10 is ruggedly designed for field use by veterinarians and aids in the diagnosis of traumatic gastritis.

Schering Corporation

Booth 42

Members of the AVMA and their guests are cordially invited to visit the Schering exhibit and discuss with our veterinarians and representatives Schering's veterinary products, including Meticorten, which have been developed by Schering research. These veterinary items are being distributed exclusively to the veterinarian.

Sharp & Dohme, Division of Merck & Co., Inc.

Booth 33

Featuring Cortone® and Hydrocortone® products in veterinary practice, Dornavac® for local use in enzymatic debridement, Antilepto (Leptospira bacterin) for *Leptospira pomona* infection in cattle. Will also display sulfonamide and antibiotic products for use in both large and small animals.

Stanton Scientific Equipment Co.*Booth 43*

Interesting and informative demonstrations will be made, for visitors, of the use of the Handy Resuscitator in resuscitation and controlled respiration procedures in both small and large animals. The Handy Resuscitator in combination with anesthesia equipment will also be shown.

R. J. Strasenburgh Co.*Booth 22*

Maxitate w/Rauwolfia Comp. for tensive states, Biphetacel for obesity, Skopolate treatment for gastrointestinal disorders, Strascogesic for pain, Kaprylex for rectal and perianal complications of antibiotic therapy will be featured at the R. J. Strasenburgh Co. exhibit, along with Naprylate for fungous infections and Gexane for mange.

Swift & Company*Booth 35*

Swift & Company's booth will again feature the company's two dog foods —canned Pard and the improved, homogenized dry dog food, Pard Meal. Swift & Company will again accept registrations at the booth for a supply of dog care and training pamphlets for distribution by veterinarians to their clients.

University Press Books*Booth 77*

There will be an exhibit of books in the field of veterinary science published by Cornell University Press and the Iowa State College Press.

The Upjohn Company, Department of Veterinary Medicine*Booth 34*

The Upjohn Company, Department of Veterinary Medicine, will exhibit veterinary specialty products, including Kaobiotic, Teatube-Neomycin tube and plaster, Mycisolfa, Veterinary-Cortisone suspension, Veterinary-Biosulfa tablets, and Veterinary Dihydrocillin Readimixed; in addition, the various dosage forms of Panmycin (tetracycline hydrochloride) and several other products from our line of pharmaceuticals for use in man which have veterinary application. Appropriate samples and literature will be available. Welcome to the Upjohn booth!

U. S. Vitamin Corporation*Booth 67*

Our exhibit will feature Methisochol, complete lipotropic formula (B₁₂, choline, inositol, methionine, liver extracts) effective in the treatment of canine hepatitis and other liver diseases; also effective against "yellow fat" degeneration in mink. Pervinal, scientifically balanced vitamin-mineral supplement for dogs, mink, chinchilla, and other furbearing animals and Dodecavite Drops (B₁₂ — the growth promoting, anti-anemia factor) will also be featured.

Veterinary Medicine*Booth 12*

Veterinary Medicine will exhibit sample copies of recent issues and solicit new and renewal subscriptions. An attractive display of veterinary literature of the world will make it possible for visitors to examine sample copies. All are invited to join in our Golden Anniversary, the fiftieth year of continuous publication of *Veterinary Medicine*.

Vitamineral Products Company

Booth 79

The Vitamineral Products Company, Peoria, Ill., invites you to stop at booth 79 for copies of the twenty-fifth edition of the "VpC Feed Formula Book" which contains valuable information on the proper care and feeding of livestock and poultry. We know your clients will appreciate a copy.

The Warren-Teed Products Company

Booth 86

Your problem of hemorrhage control may be solved with Klot. Our original, modern hemostatic formulation is fast, effective, and safe. Your need for competently investigated, honestly advertised, and ethically distributed specialty products is met by our organization. Drop in and visit with us.

The Williams & Wilkins Co.

Booth 52

For veterinary books of current importance visit the Williams & Wilkins Company's booth 52. On display are the *British Veterinary Journal* and such classics as Benesch and Wright's "Veterinary Obstetrics—Equine and Bovine," Kirk's "Index of Treatment in Small Animal Practice," and "Index of Diagnosis for the Canine and Feline Surgeon."

Wilson & Co., Inc.

Booth 41

Visit Wilson and Company's new, modernistic display of Ideal Dog Food. Wilson's Ideal Dog Food is a scientifically balanced ration compounded to feed a dog completely. As our advertising shows, don't feed half your dog, feed him completely on this scientifically balanced, nutritional product. The best in the field.

Winthrop-Stearns Inc.

Booth 32

Winthrop-Stearns Inc. will display a number of its newer introductions namely Phisohex, Parenamine, Demerol, Mebaroin, Canine Distemper Vaccine Chicken Embryo, Canine Hepatitis Vaccine, Aralen, Betasynplex, Neo-Synephrine, as well as the well-known veterinary specialties Neo-prontosil, Nemural, Istin, and Omnidin. A full line of Eaton Laboratories' veterinary specialties will be on exhibit, including the latest introduction, Furoxone, for the treatment of poultry diseases.

Wynkoop Horn Saw Company

Booth 5

Our display will include: Kyne-Saws; cosmetics for dogs and cats; and Kyne-Snaps.

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The descriptions for the following exhibits had not been received at time of going to press:

Kingan, Inc., Indianapolis, Ind.

E. R. Squibb and Sons, New York, N. Y.

SURGERY & OBSTETRICS

AND PROBLEMS OF BREEDING

Occluded Cervix in a Heifer

I. A. SCHIPPER, D.V.M., M.S.

Fargo, North Dakota

The following case is reported not because it is new, but that it may serve as an aid in the diagnosis of similar cases.

An examination was requested for an 18-month-old registered Guernsey heifer when an attempt to inseminate her failed.

therefore, was slaughtered and the reproductive organs obtained for examination.

Examination revealed a $\frac{3}{4}$ -inch thick muscular septum, completely occluding the vagina, with the urethral opening just posterior to it. Anterior to the muscular mass, the vaginal cavity was filled with a molasses-colored tenacious material.

The posterior part of the cervix was single and the anterior part was divided

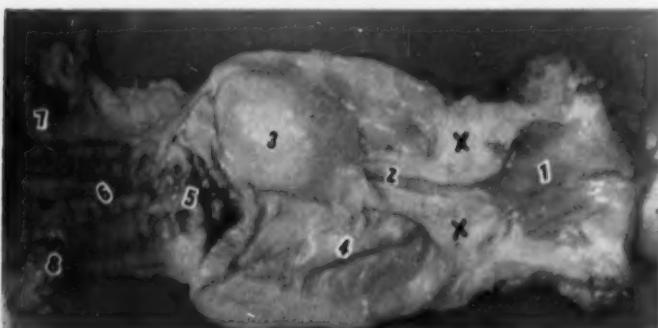


Fig. 1—Photograph of the heifer's genitalia (opened): (1) vulvo-vaginal tract posterior to the muscular occlusion; (2) urethral tract (opened); (3) outline of urinary bladder; (4) vaginal cavity anterior to muscular occlusion; (5) cervical septum; (6) muscular septum between uterine horns; (7) right ovary with corpus luteum; (8) left ovary with follicle; (x) muscular wall occluding the vagina.

The inseminator was unable to pass the insemination pipette more than 6 inches into the genital tract. He had had a similar experience with another heifer but she had been sold for slaughter.

Rectal examinations of the Guernsey heifer revealed an apparently functional genitalia with a corpus luteum in the right ovary and a follicle in the left. The urinary bladder appeared to be enlarged and could not be evacuated upon application of pressure. Approximately 6 inches anterior to the vulvar labia, a thickened area could be palpated. Examination with a vaginal speculum revealed a blind tract 6 inches deep, with the urethral opening at the anterior extremity of its ventral surface.

Surgical relief was not attempted chiefly because, if successful, the possible progeny might have inherited this defect. The heifer,

into two distinct cervices, each serving as an inlet to a uterine horn. There was also evidence of a chronic cystitis.

On the basis of the necropsy findings, it is evident that corrective surgery would have been impractical in this case.

Unusual Foreign Body in Horse's Mouth

A draft horse, which had been unable to eat well for three or four days, was found to have a large, sausage-shaped swelling on the lateral part of the tongue. Palpation was violently resented so 20 cc. of a 2 per cent procaine hydrochloride solution was injected above, below, and in front of the swelling. No opening was visible but after making a small incision, a darning needle 2 1/2 inches long was engaged and removed with forceps. The animal, given tetanus antitoxin and procaine penicillin therapy, made a rapid recovery.—*Canad. J. Comp. Med.*, April, 1955.

Dr. Schipper is assistant professor, Veterinary Science Department, North Dakota Agricultural College, Fargo. Published with the permission of the director, North Dakota Agricultural Experiment Station, Fargo.

Comminuted Fracture of the Femoral Neck and the Pelvis of a Dog

C. A. HENLEY, D.V.M.

Jacksonville, Illinois

A 6-month-old female Foxhound had a fracture of the neck of the femur and of the pelvis in the region of the acetabulum caused by a bullet from a .22 caliber rifle (fig. 1). The plan of the operation was to replace the head and neck of the femur by a stainless steel prosthesis and to stabilize the fracture in the acetabulum by external fixation.

The dorsal surgical approach to the coxo-femoral joints as described by Brown¹ was used. An area in the region of the trochanter was shaved and prepared and a skin incision in line with the trochanter was made from the midline of the lumbosacral area to a point one-third of the way down the shaft of the femur. The incision was deepened through the fascia and the biceps femoris muscle. The tissues were separated and the gluteal muscles severed in the manner described. This exposed the joint capsule on its dorsal circumference. The capsule was opened revealing the fractured head and acetabulum. All loose bone was removed and the area was irrigated with sterile saline solution to remove the small fragments. The femur was then rotated clockwise to expose the jagged neck which was reshaped to make a flat surface in preparation for the prosthesis. A 3/16-inch hole was drilled through the center of the long axis of the neck and extended through the shaft and lateral cortex of the bone. A prosthesis which fit the acetabulum was then selected and the stem placed in the drilled hole. The end of the stem was allowed to extend slightly beyond the lateral cortex.

The comminuted acetabulum presented an additional problem. To maintain it in the proper position, the head of the prosthesis was immobilized in what remained of the acetabulum. To do this, two stainless steel pins were placed in the shaft of the ilium extending from the dorsal crest through the ventral cortex and two other pins were placed in the superior ischiatic spine in a like manner. One small bar was placed between the two pins in the ilium

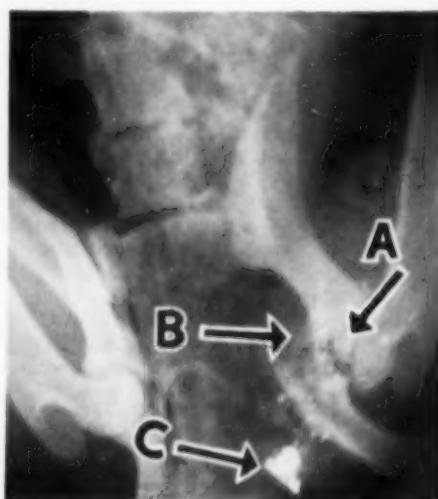


Fig. 1—Radiograph of pelvis of a dog showing a fracture of the neck of the (A) femur, (B) acetabulum, and (C) the bullet which caused the fracture.

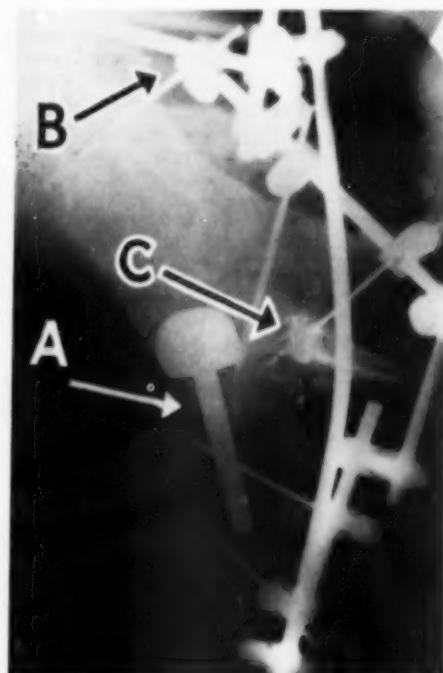


Fig. 2—Radiograph after the operation showing the metal head (A) prosthesis, (B) the supporting pins and connecting bars, and (C) fragments from the bullet.

Dr. Henley is a general practitioner in Jacksonville, Ill.

and another small bar between the two pins in the ischium. These two short bars were then connected by a longer bar. Two pins were likewise put in the proximal third of the femoral shaft and were bridged by a short similar bar. The metal head of the prosthesis was then placed in the acetabulum and the capsule; the bellies of the gluteal muscles and the skin were sutured. An additional bar was used to connect the bar on the pelvis to the bar on the femur. In this manner, the prosthesis was stabilized in the fractured acetabulum (fig. 2).

The wounds healed satisfactorily with the aid of antibiotics. After approximately three weeks, the bars and the six pins were removed. The functional result was surprisingly good.

This case is reported to show how combinations of methods may be used to control badly comminuted hip joint and pelvic fractures.

References

¹Brown, R. A.: Surgical Approach to the Coxofemoral Joint of Dogs. *North Am. Vet.*, 34, (June, 1953): 420-422.
²Brown, R. A.: The Experimental Use of Stainless Steel Femoral Head Prostheses in Normal Dogs and Cats. *North Am. Vet.*, 34, (June, 1953): 423-428.

Metastasized Tumor in the Abdomen of a Dog

A small (15 lb.), 8-year-old female Cocker Spaniel had an abdominal enlargement that had been noticed for three months. The possibility of pregnancy (she had been misbred about six weeks previously) was dismissed when a large mass extending from the rib cage to the pelvis



Fig. 1—The liver (1) of a dog showing tumor (2) and kidney (3) surrounded by tumor.

Dr. Middleton is a general practitioner in Corpus Christi, Texas.

became palpable. Ascites was also present and 500 cc. of fluid was aspirated from the abdominal cavity.

An exploratory laparotomy revealed the mass to be a tumor which had invaded the liver and probably was metastatic. The prognosis seemed hopeless so euthanasia was performed. Further examination revealed a tumor-laden liver extending posteriorly and almost completely engulfing the left kidney. The kidney was not affected. The lungs contained at least 100 small metastatic tumor nodules. The liver weighed 5 1/4 lb., one-third of the dog's weight. The primary site of the tumor was not identified and no histological studies of the neoplasm were made.—*V. V. Middleton, D.V.M., Corpus Christi, Texas.*

More Pigs by Double Breeding

To test its effects, 4 sows of one breed were bred on their first day of estrus to a boar of a second breed and on the third day to a boar of a third breed; all were purebred animals with distinctive coloring. The sows farrowed 46 pigs whose color indicated that 16 were from the second breeding. By following this method, the breeder increased his litter average nearly 50 per cent over the previous years, when field breeding was used.—*Farm J., April, 1955.*

Calving Losses in Young Heifers.—In an Oklahoma study, 50 per cent of beef heifers which calved at 2 years of age required help compared to 4 per cent of 3-year-old heifers. There were no losses in the 3-year-old group, but 10 per cent of the calves and 4 per cent of the 2-year-old heifers were lost.—*Wallaces' Farmer, March, 1955.*

Saving More Lambs

A rancher, with 2,600 ewes, uses a clever system of removing the lambs before the ewe has a chance to smell or see them. The ewes are then checked and only those with an adequate milk supply are given 2 lambs. Before being placed with the ewe, the lambs are wet with warm salt water and by the time the ewe has licked off the salt, she usually will claim the lamb.—*Farm J., April, 1955.*

Ureteral Abscess in a Sow

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This report of a ureteral abscess in a sow is presented because of its unusual nature and its illustration of the value of exploratory laparotomy as a diagnostic aid.

The patient, a 14-month-old crossbred sow, had delivered one normal litter and was rebred on Nov. 27, 1954. When examined (by W.R.T.) on December 15, she was lethargic, had a temperature of 101.4 F., and on abdominal palpation seemed to have hard masses in the intestines. Since the drinking water was frozen, a diagnosis of water deprivation with constipation appeared justified. A laxative was administered.

There was apparent recovery for about three weeks. At this time, the sow again became depressed and lethargic. The owner administered 1 quart of mineral oil, but there was no improvement in general condition. Normal bowel movements and passage of clear urine were observed.

The sow was seen again on Jan. 27, 1955. Her condition had deteriorated markedly. She lay down most of the time, was reluctant to rise, and her abdomen was bilaterally distended with palpable fluid. Paracentesis was performed and several cubic centimeters of cloudy gray fluid with a urine-like odor was aspirated. The tentative diagnosis was rupture of the uterus, and exploratory laparotomy was performed.

After 10 cc. of 2 per cent procaine was injected into the lumbosacral space, the left flank was prepared by shaving, scrubbing, and application of iodine. Another 10 cc. of 2 per cent procaine was infiltrated along the line of incision. A 7-inch vertical incision was made into the peritoneal cavity. A thick-walled, well-vascularized, somewhat fluctuating mass with extensive omental adhesions presented itself at the incision. The nongravid uterus, stomach, and bladder were identified as independent of the mass. The mass, which extended from the dia-phragm to the pelvis and from one flank to the other, was incised and approximately

5 gal. of thin, gray exudate with a urine-like odor was expressed. As the condition was considered inoperable, euthanasia was performed.

Necropsy revealed an abscess almost completely filling the peritoneal cavity, with a wall 1 to 2 cm. thick and roughly divisible into three layers. The inner layer was felted and dirty brown with adherent shreds and plaques of yellow-brown fibrin. The middle layer was composed of fibrous tissue, and the outer layer was peritoneum with multiple omental adhesions.

The colon was extensively adhered to the abscess wall. There was atresia but no stenosis of the ascending, coiled, and descending portions of the colon in the adhered areas.

The right kidney was identified as a greatly reduced, largely fibrous mass in the dorsocranial portion of the abscess wall. The cortex was about half the normal width and marked by white streaks of fibrous tissue. The pelvis of the kidney was relatively uninvolved, and a probe was readily passed from it through an opening (ca. 5 mm.) into the abscess cavity. The right ureter, traced proximally 8 to 9 cm. from its outlet into the bladder to the dorso-caudal part of the abscess, allowed the passage of a probe from the bladder through an opening (ca. 5 mm.) into the abscess cavity.

Conclusion.—An abscess of the right ureter in a sow with chronic right renal atrophy, fibrosis, and chronic adhesive colitis is described.

A ureteral abscess is probably a rarity but is reported as another condition which must be considered in the differential diagnosis of abdominal distention in the sow.

Hormonal Induction of Lactation

Udder growth and lactation were artificially produced in 7 heifers, each a twin, by the daily injection, subcutaneously, of 50 μ g. of diethylstilbestrol and 50 mg. of progesterone for two months after which, in the next three months, the dosage was gradually doubled. Lactation then was initiated by increasingly larger daily doses (2 to 8 mg.) of stilbestrol alone for thirty days. The milk production, except in 1 heifer, was much below that of the untreated identical twin, which calved normally.—*Vet. Bull., March, 1955.*

A Simplified Apparatus for Obtaining Semen from Dogs by Electrical Stimulation

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While studying the circulation of the penis in the dog,¹ an electrical apparatus was devised to produce erection. It proved to be equally effective in the production of ejaculation. Recently, methods have been perfected for the preservation and shipment

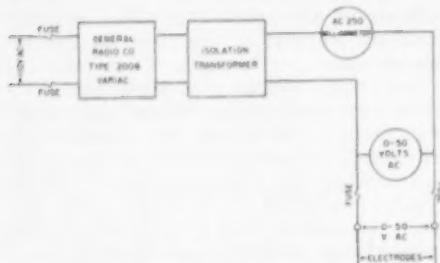


Fig. 1—Wiring diagram of electroejaculator.

of dog semen for the purpose of artificial insemination.^{2,3} It may be shipped either in a diluted or undiluted state. According to Carlson,² Harrop,⁴ and Leonard,¹⁰ artificial insemination is used in dogs when natural breeding is impossible because of geographical distances or for physiological reasons. It shows merit in extending the usefulness of valuable, proved studs and as an aid in disease control. Also, artificial insemination would lessen the difficulties encountered when breeding dogs from different countries (import and export restrictions, quarantine, etc.). The American Kennel Club will now consider the registration of a litter resulting from artificial insemination, provided certain stipulations are met.¹⁰

Although it is relatively simple to collect semen from most studs by means of an artificial vagina or a similar method, some males are unwilling to ejaculate under these conditions. A relatively simple method of electroejaculation is of value in these cases.

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LITERATURE

Although electrical inducement of penile erection was accomplished as early as 1863 by Eckhard⁵, Gunn⁶ is considered to be the first to perfect a satisfactory method of collecting semen from domestic animals by electrical stimulation. Working primarily with rams, Gunn⁶ placed one electrode (a copper wire) in the rectum, and another electrode (a steel needle) into the longissimus dorsi muscle over the lumbar vertebrae.

Brady and Gildow⁷ and Terrill¹¹ collected semen from rams by a bipolar method similar to that used by Gunn. Benham and Enders⁸ devised a stimulator which was effective in the artificial insemination of small furbearing animals. More recently, Dziuk *et al.*^{9,10} used a unipolar method of electrical stimulation in order to collect semen from larger domestic animals (bulls, goats, boars, rams).

PROCEDURE

The electroejaculator consists of a variac (General Radio Co., type 200B), an isolation transformer (to prevent electrocution of the animal or operator), an AC 250 milliammeter, and a voltmeter (0-50 AC) (fig. 1). The instrument panel (fig. 2) contains two fuses: a 3-AG, $\frac{1}{4}$ -ampere line fuse, and a 3-AG, $\frac{1}{4}$ -ampere fuse in the milliammeter circuit. The variac control knob in the center of the panel is used to regulate the voltage and, indirectly, the milliamperage. In addition to a signal light and a switch for current contact and break, the panel contains two apertures for electrode wire contacts. One electrode is a round, 6-inch copper rod, $\frac{1}{4}$ inch in diameter, blunted at the free end. All but the terminal 1 inch is covered by plastic insulating tape. This electrode is detachable from the wire connected to the instrument panel by means of a threaded collar. The other electrode is a copper spring clip. The detachable wires connecting the electrodes to the instrument panel are 6 ft. long, rubber insulated, and impervious to moisture (fig. 2).

The procedure used to cause ejaculation is as follows: The dog is given an enema and is then anesthetized with pentobarbital sodium. Although not essential, it is preferable to clip the hair from a small region between the third and fourth lumbar vertebral spines. An electrode jelly is applied freely over this area and also to the free end of the rodlike electrode, which is inserted approximately 4 inches into the rectum. The other electrode (copper clip) is attached to the jelly-covered skin of the lumbar region. The current thus involves the hypogastric nerves (sympathetic division of the autonomic nervous system). The wire from the apparatus is plugged into the usual 60-cycle AC current. Thirty volts and 140 milliamperes (ma.) are given intermittently (10 seconds on and 10 seconds off) for three or more times.

If erection is desired, rather than ejaculation, the copper skin clip is attached over the first sacral vertebra, affecting the pelvic nerves (nervi

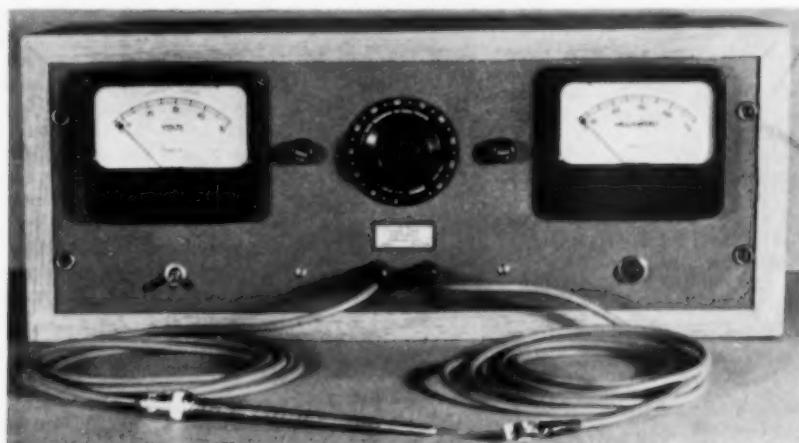


Fig. 2—Electroejaculation apparatus. The voltmeter is on the left and the milliammeter on the right. The variac dial in the center is used to control voltage. A $\frac{1}{4}$ -ampere fuse is on the left (line circuit) and a $\frac{1}{4}$ -ampere fuse on the right (milliammeter circuit). The current switch is below the voltmeter and the signal light is beneath the milliammeter. The wires of the detachable electrodes (copper spring-clip and partially insulated copper rod) are plugged into the apparatus.

erigentes) which arise from the first and second sacral nerves and carry autonomic impulses (parasympathetic division of the autonomic nervous system) to the genitalia and neighboring viscera. The current used may vary from 26 volts, 70 ma., to 46 volts, 248 ma., depending upon the size of the dog.

RESULTS AND DISCUSSION

As in rams,^{2,8} electrical stimulation may cause muscular contractions, especially of the pelvic limbs. Thus, it is preferable to carry out the above procedures while the dog is under general anesthesia. However, the animals show no signs of discomfort when awakened. With this apparatus, there is no danger of electrical fibrillation of the heart, or any other damage, since the amperage is low and the placement of the electrodes is anatomically such as to have little effect on the heart.

Ejaculation occurs forcibly. Usually the first one or two samples contain few spermatozoa, but the third and subsequent samples consist typically of tightly packed, highly motile, normal spermatozoa.

In addition to being useful in the collection of semen from recalcitrant studs, this apparatus is of great value in studies of erection and in comparative blood pressure determinations. Comparative studies of arterial and venous pressures (carotid

artery, dorsal artery of penis, dorsal vein of penis) have helped determine the mechanism of penile turgescence.⁴

SUMMARY

Due to generally increased interest in artificial insemination of dogs, the availability of an electroejaculation apparatus should prove to be of value when attempting to collect semen from stubborn males. Some studs are unwilling or unable to breed naturally or with the use of an artificial vagina.

A relatively simple, inexpensive electrical apparatus has been described which is effective in causing ejaculation. Samples of motile, viable spermatozoa may be collected within a minimum period of time and without undue risk to the stud or to the operator.

References

- Benham, T. A., and Enders, R. K.: An Improved Stimulator for Obtaining Semen from Small Mammals. *North Am. Vet.*, 22, (1941): 300-301.
- Brady, D. E., and Gildow, E. M.: Characteristics of Ram Semen as Influenced by the Method of Collection. *Proc. Am. Soc. Anim. Prod.*, 32, (1939): 250-254.
- Carlson, W. D.: The Successful Shipment of Dog Semen. *North Am. Vet.*, 35, (1954): 448-449.
- Christensen, G. C.: Angioarchitecture of the Canine Penis and the Process of Erection. *Am. J. Anat.*, 95, (1954): 227-262.
- Dziuk, P. J., Graham, E. P., and Peterson, W. E.:

The Technique of Electroejaculation and Its Use in Dairy Bulls. *J. Dai. Sci.*, 37, (1954): 1035-1041.

⁴Dziuk, P. J., Graham, E. F., Donker, J. D., Marion, G. B., and Peterson, W. E.: Some Observations in Collection of Semen from Bulls, Goats, Boars and Rams by Electrical Stimulation. *Vet. Med.*, 49, (1954): 455-458.

⁵Eckhard, C.: Untersuchungen über die Erektion des Penis beim Hunde. *Beitr. Anat. Physiol.*, 3, (1863): 123-166.

⁶Gunn, R. M. C.: Fertility in Sheep. Artificial Production of Seminal Ejaculation and the Characters of the Spermatozoa Contained Therein. Council for Scientific and Industrial Research, Commonwealth of Australia, Bull. 94, 1936.

⁷Harrop, A. E.: Artificial Insemination of a Bitch with Preserved Semen. *Brit. Vet. J.*, 110, (1954): 424-425.

⁸Leonard, E. P.: Dogs. Chapter in "The Artificial Insemination of Farm Animals" by E. J. Perry, ed. 2nd ed. Rutgers University Press, New Brunswick, N. J. (1952): 216-223.

⁹Terrill, C. E.: Comparison of Ram Semen Collection Obtained by Three Different Methods for Artificial Insemination. *Proc. Am. Soc. Anim. Prod.*, 33, (1940): 201-207.

A Massive Transfusion

When a postpartum hemorrhage threatened the life of a woman in Britain, she was given 35 pints of blood during a six-hour operation, 23 pints of it during a period of two and a half hours. Usually, it takes four hours to give a patient 1 pint. The blood was transfused through three vessels simultaneously—a vein in each arm and an artery leading from the heart. At the end of the operation, her blood pressure was almost normal.—*J.A.M.A.*, Feb. 26, 1955.

Hysteria in the Parturient Sow

A survey in three Cornbelt states indicates that 1.1 per cent of pigs farrowed are eaten by the sow. This frenzied condition may appear only after normal farrowing is complete, when the pigs begin fighting for a teat or approach the sow's head. More often the sow is restless and may even remain standing during delivery. She may destroy the entire litter in a few minutes or may kill only a few at various intervals, unless they are removed. Usually, there is little milk in the udder. After an hour or two the sow may nurse the pigs normally. Since spontaneous recovery may occur any time, therapeutic measures are difficult to evaluate.

The sows may be crated or tied every

few hours and the pigs allowed to nurse. Or 30 to 50 units (1.5 to 2.5 cc.) of posterior pituitary extract or of purified oxytocic principle may be injected with the hope that it will stimulate a let-down of milk which may quiet the sow and induce her to nurse her pigs. Anterior pituitary extract is also used. Nembutal® may be given as a sedative, 5 to 10 cc. deep in each ham, for prolonged effect. Hysteria seldom occurs in sows that choose and prepare their own nests. Often, only 1 sow in a herd is affected, so the importance of proteins in the ration is indistinct.—*Iowa State College Vet.*, 17, No. 2.

Intestinal Anastomosis in a Calf

An 8-month-old heifer that had shown anorexia, abdominal pain, and no defecation for three days did not respond to ordinary treatment. When finally examined *per rectum*, a sausage-like area was detected in the small intestine. Laparotomy, under anesthesia via local infiltration while standing, revealed an irreducible intussusception 9 inches long. An excision and anastomosis was done with a 1-oz. gelatin capsule inserted into the lumen to facilitate suturing with catgut. After completion of the operation, the calf was fed no solid food for four days and made a satisfactory recovery. A general anesthetic was recommended for such operations since the calf showed pain while the diseased intestine was being excised.—*Canad. J. Comp. Med. and Vet. Sci.*, March, 1955.

A New Type of Study in Bovine Spermiogenesis

The techniques of studying plant genetics was applied for the first time to the finer details of cell division in spermogenic epithelium of fertile and sterile bulls. Small tissue specimens from the testicles of living bulls were fixed within one to three minutes after removal. The investigation illuminates chromosomal conditions in bovine spermiogenesis and should open new paths for investigating the etiology and pathogenesis of male infertility. Dr. Odd Knudsen conducted these investigations into the spermiogenesis of bulls in 1954 at the Royal Veterinary College in Stockholm and has prepared a monograph of 79 pages and 44 figures.—*Nils Lagerlöf, Stockholm, Sweden.*

Artificial Insemination in Goats

In Japan, where artificial insemination has been used in goats since 1938, there are over 500 established breeding stations. In addition to breeding bucks, these stations have 1 or more bulls, boars, stallions, and rams. Some of the semen is distributed by carrier pigeons. Of 8,076 female goats bred in 1952, 89 per cent conceived.

The semen is usually collected by using an artificial vagina but some is obtained by the use of an electric shocker. This apparatus has one rodlike pole inserted into the rectum while the other pole is a pin which penetrates to the subcutaneous tissues over the fourth or fifth lumbar vertebra. The electric switch is closed two or three times for a moment each. The semen is injected (0.2 to 0.3 cc.) into the doe's cervix, using an inseminating tube which is passed through a vaginascope while an attendant straddles the doe and raises her hind quarters.—*Dai, Goat J., May, 1955.*

Spayed Heifers Make Cheaper Gains.—In a California experiment, oophorectomized heifers gained no faster but they required only 797 lb. of feed per 100 lb. of gain compared to 844 lb. for the entire heifers.—*Farm J., April, 1955.*

Identical Twins Used in Bovine Male Fertility Studies

The first use of the twin method in studying a problem in the field of veterinary medicine was in an experiment conducted from 1945 to 1953 at the Veterinary College in Stockholm, Sweden, by Dr. Allan Bane (*Acta Agric. Scand.*, 4: 95-208). Six pairs of identical twin bulls were used, 1 of each being raised at one of three levels of nutrition from 1 to 18 months of age. Environmental influences were the same for all during the whole experiment and all received equal amounts of food after 18 months of age. Two pairs of bulls were retained until 7 years of age.

The twin on the highest nutrition level usually had twice or more volume of ejaculate, sperm concentration, and duration of motility, and a tendency for a higher frequency of abnormal sperm heads and "cytoplasmic drops" than did his mate. The duration of motility and abnormality of the sperm middle pieces and tails were not sig-

nificantly affected. Mating behavior and the weights of the pituitary and lateral parathyroid glands were not affected. The higher nutrition levels seemed to increase the weight of the testes, epididymides, and seminal vesicles, while it lowered the weights of the thyroid and adrenal glands.

—*Nils Lagerlöf, Stockholm, Sweden.*

Intrapleural Use of Erythromycin

In a tuberculosis sanatorium, several patients with postpneumothorax pleural effusions were given single doses of 250 to 400 mg. of erythromycin intrapleurally. This resulted in therapeutic levels of the drug in the pleural fluid and in the blood stream for at least three days. When the drug was given on three consecutive days, therapeutic levels were maintained for six days. There was no evidence of toxicity or irritation of the pleura.—*Antibiotic Med., April, 1955.*

Pregnancy Disease in Ewes

Pregnancy disease in ewes is basically due to carbohydrate inadequacy and is often "triggered" by a snowstorm or by anything which interferes with grain feeding. It is in contrast to enterotoxemia which usually follows an excess of carbohydrate intake. Exercise is of no benefit. Many ewes recover if the lambs can be removed by inducing parturition or by cesareotomy.—*Frank Thorp, Jr., D.V.M., Michigan.*

Factors that Influence Calf Size

Comparison of calves from 5,952 Hereford cows, from 1926 to 1951, showed the males 5.6 lb. heavier at birth and 26.2 lb. heavier at weaning than heifer calves. These weights increased steadily in the calves of cows up to 6 years of age, then declined.—*J. Anim. Sci., May, 1955.*

Cortisone Therapy and Anesthesia

It is suggested that patients on cortisone therapy are sensitive to anesthetic agents, particularly opiates and barbiturates. They also tolerate blood loss badly. Special precautions should be taken when it is necessary to operate on a patient who has received cortisone therapy within six months.

—*Brit. M. J., March 19, 1955.*

CLINICAL DATA

Chronic Respiratory Disease. III. The Effect of Treatment on the Pleuropneumonia-like Organism Flora of Avian Tracheas

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THE AUTHORS have previously reported on a laboratory method for the diagnosis of chronic respiratory disease (CRD) of chickens that circumvented the many cumbersome and time-consuming manipulations inherent in other diagnostic procedures. This new technique is based on the rapid isolation of pleuropneumonia-like organisms (PPLO) from the tracheas of chickens. This rapid isolation is accomplished on a solid, highly nutritive medium containing thallium acetate as a selective inhibitor.⁴ The use of this technique led to the detection of a subclinical and recovered carrier state of long duration.⁵ In the present investigation, this method of isolation has also been used successfully for studying the effect of antibiotics on this carrier state.

It has been noticed in our routine diagnostic service that at times it was possible to isolate PPLO from birds with CRD that had been treated with antibiotics that inhibit PPLO *in vitro*. At other times, these same antibiotics seemed to render the isolation of PPLO impossible. We had also noticed that when field cases were treated, respiratory distress was often alleviated, egg production was increased, and the flock appeared to be thrifty. This apparent recovery, however, was followed within a period of weeks by a relapse. Using clinical evidence, such as postmortem findings, lowered egg production, feed intake, etc., as the criteria of disease, other workers also noticed inconsistent results with antibiotic treatment.^{2,6}

These inconsistencies raised questions that needed further investigation to determine (1) a basis for a more rational

therapy and (2) the effect of antibiotics on isolation of the organism and on diagnostic procedures. An approach directed at detecting changes in the PPLO flora of the chicken's trachea after therapy obviously would aid in answering both of these questions.

MATERIALS AND METHODS

The method utilized for the rapid isolation of PPLO from the trachea was the same that was employed in earlier work.⁴

Birds used in this study were of two types. Type 1 chickens were made carriers by placing in their tracheas 0.2 ml. of a 48-hour broth culture of an avian strain (J) of PPLO. The type 2 chickens were typical field cases. The 8 birds of type 1 and 8 of type 2 were housed in four wire cages, three of which were contiguous; the fourth, or control cage, being separated from the others by an air space of approximately 10 ft. Two birds of type 1 and 2 of type 2 were placed in each cage.

In order that our experiments would have meaning, it was necessary to be reasonably sure that the carrier state was stable and would remain so except for a possible effect due to treatment. In a previous study dealing with carriers, it was found that birds harbored PPLO for long periods as judged by repeated isolations.⁶ From the present lot of 16 birds, PPLO had been repeatedly isolated prior to treatment, thus any marked change in the PPLO flora would be due to treatment.

In the administration of antibiotics and the care of animals, an effort was made to duplicate average farm conditions, *i.e.*, water-soluble aureomycin® or terramycin® were administered as recommended by the label on the container and no attempt was made by the caretaker to keep the quarters scrupulously clean. The CRD agent was shown to be sensitive to these antibiotics in the developing chicken embryo.⁷

Before treatment, the antibiotic sensitivity to penicillin, chloromycetin®, aureomycin, and terramycin was crudely determined for the PPLO isolated from these birds by observing the zone of

From the Department of Preventive Medicine and Hygiene and Pathology, with the cooperation of the Poultry Diagnostic Laboratory, School of Veterinary Medicine, University of Pennsylvania, Kennett Square, Pa.

inhibition of PPLO (with the aid of 100 x magnification) produced by standard bacto-antibiotic sensitivity discs.

The treatment regimen was as follows: The first cage of birds received a level of 10 Gm. per liter of soluble terramycin in their drinking water (approximately 1 teaspoonful per pint of water) for five days. The second group received soluble aureomycin at the same level for the same period. (Ten grams of soluble terramycin or aureomycin is roughly equivalent in activity to 465 mg. of pure antibiotic.) The 4 birds in the third cage each received a single 2-ml. subcutaneous injection of terramycin suspended in mineral oil (25 mg./ml.). The birds in the fourth (control) cage received no therapy. At the end of seven days (2 days post-treatment), swabs from the tracheas of each of the birds were cultured for PPLO. This culturing was repeated at the end of nine weeks.

RESULTS

Prior to antibiotic treatment, the strains were judged to be sensitive to aureomycin and terramycin, less sensitive to chloromycetin, and resistant to penicillin. When post-treatment cultures were made from the various groups of birds, PPLO could be isolated from the tracheas of control birds but not from treated birds. However, at the end of nine weeks, it was again possible to isolate PPLO from the treated birds, as well as from the control birds (table 1).

TABLE I—The Effect of Treating Chickens with Terramycin, Aureomycin, and Terramycin in Oil on the PPLO Flora of Their Tracheas

Treatment	Type of bird	Pretreatment 1 week	Post-treatment 2 days	Post-treatment 9 weeks
Terramycin (50 mg./2 ml.)	Type 1 ¹	+	—	+
	Type 1	+	—	+
	Type 2 ²	+	—	+
Terramycin (10 mg./liter for 5 days)	Type 1	+	—	+
	Type 1	+	—	+
	Type 2	+	—	+
Aureomycin (10 mg./liter for 5 days)	Type 1	+	—	+
	Type 1	+	—	+
	Type 2	+	—	—
Controls (no treatment)	Type 1	+	+	+
	Type 1	+	+	+
	Type 2	+	+	+
	Type 2	+	—	+

¹Type 1 specimen = artificial carrier; ²Type 2 specimen = field case; — = PPLO isolated from the trachea.

DISCUSSION

The results indicate that if the PPLO is sensitive to the antibiotic, the methods commonly used for treatment may temporarily prevent the isolation of these organisms from the trachea, but that relapses may occur. Carson *et al.*¹ using

injections of terramycin in oil, showed a remarkable increase of egg production in treated flocks, only to have this increase drop again after about two months. Fahey and Crawley² believed that "Treatment . . . serves to alleviate the most worrisome and distressing symptoms. . . . However, the disease generally returns to the level of original severity. . . ."

Our observations that PPLO may recur post-treatment and the observations of others that clinical symptoms may recur suggest that existing methods of treatment are inadequate. The treatment programs in use today are basically of two types: (1) administration of high level antibiotic (at least 100 Gm./ton) for a short period with no follow-up; and (2) high level antibiotic feeding for long periods (some suggest as long as the life of the bird). An obvious fault of the no follow-up treatment is the recurrence of the disease, and the recurrence may be more severe than the primary attack. The cost of continuous high-level feeding, coupled with the possibility of developing an antibiotic-resistant bacterial population that may be important in subsequent stages of the disease or in other diseases, would make such a program undesirable. It seems more rational, in the light of existing data, that birds should be given high-level antibiotics for a few days and that the vitamin level of the feed be increased so that the birds that were not eating at full capacity would be provided with the vitamins required to retain their vigor. This program should be repeated every thirty days, especially if PPLO are still present among birds of the flock, until the clinician feels that the stress period due to crowding, temperature variation, and such is over. The period of greatest stress generally occurs in the winter. This method of treatment would also tend to minimize the emergence of resistant microorganisms and the chances would be lessened that the disease would progress from the milder tracheitis form to the more severe and costly pneumonic and air sac form. Of course, success is contingent on an early diagnosis and treatment before chronic signs associated with pneumonia and caseous air sacs appear.

One field flock, which was given a high level of antibiotic and vitamin-reinforced feed for five days each month, was the only affected laying flock observed that has

been able to maintain high egg production and good flock thriftiness throughout the winter. While this is admittedly a limited observation, it is suggested as a basis for more rational therapy. However, there is no substitute for good management.

SUMMARY

The treatment of chickens for five days with terramycin® or aureomycin® in water, or the subcutaneous injection of terramycin in oil, resulted in the inability to isolate pleuropneumonia-like organisms from the tracheas of treated birds. However, nine weeks later, it was again possible to isolate PPLO from these treated birds.

References

¹Carson, J. R., Eaton, R. D., and Luginbuhl, R. E.: The Effect of Injections of an Oil Suspension of Terramycin on Egg Production and Egg Quality in Hens Affected with Chronic Respiratory Disease. *Poul. Sci.*, 33, (May, 1954): 589-596.

²Fahey, J. E., and Crawley, J. F.: Studies on Chronic Respiratory Disease of Chickens. III. Egg Transmission of a Pleuropneumonia-like Organism. *Canad. J. Comp. Med.*, 18, (March, 1954): 67-75.

³Gross, W. B., and Johnson, E. P.: Effect of Drugs on the Agents Causing Infectious Sinusitis of Turkeys and Chronic Respiratory Disease (Air-Sac Infection) of Chickens. *Poul. Sci.*, 32, (March, 1953): 260-263.

⁴Lecce, J. G., and Sperling, F. G.: Chronic Respiratory Disease. I. The Isolation of Pleuropneumonia-like Organisms as a Diagnostic Aid. *Cornell Vet.*, 44, (Oct., 1954): 441-449.

⁵Lecce, J. G., and Sperling, F. G.: Chronic Respiratory Disease. II. Pleuropneumonia-like Organisms Associated with a Carrier State. *Univ. of Pennsylvania Bull., Vet. Exten. Quart.* 134, (April, 1954): 96-98.

⁶Van Rockel, H., and Olesiuk, O. M.: The Etiology of Chronic Respiratory Disease. *Proc. Book, AVMA* (1953): 289-301.

⁷Wong, S. C., and James, C. G.: The Susceptibility of the Agents of Chronic Respiratory Disease of Chickens and Infectious Sinusitis of Turkeys to Various Antibiotics. *Poul. Sci.*, 32, (July, 1953): 589-593.

Immunization Against Lungworms

Passive immunization against *Dictyocaulus viviparus* in young calves was attempted. The serum was obtained from 6 calves which had recovered from field infections and then had their antibody titer increased by reinfection with infective larvae. Five baby calves were given the globulin precipitate of this serum intraperitoneally for three days. Two days later

these calves and 5 controls were each infected with 4,000 *D. viviparus* larvae. The treated calves evidenced immunity by an increased antibody titer, the absence of respiratory symptoms, and their improved condition.

At necropsy, 30 days after infection, they revealed a greatly reduced number of lungworms and lesions as compared to the controls. Consolidation of the lungs paralleled the number of parasites present which emphasizes that prevention of infection would be much preferred to therapy aimed at destroying the worms *in situ*.—*Vet. Rec.*, April 16, 1955.

Fat Heifers Become Poor Milkers

Two pairs of identical twin heifer calves were used in a Tennessee experiment with 1 of each pair fed normally; the others after 3 months of age were fed, for a year, all the grain they would eat. The fattened heifers produced only 52 per cent as much milk as their twins during the first five weeks of both their first and second lactations. When first bred, the fattened heifers were 19 per cent heavier but their udders had not developed normally. Since the mammary gland is largely developed by the sixth month of gestation, heavier feeding later should not be harmful and will increase their body reserve.—*Hoard's Dairyman*, March 25, 1955.

Anthrax Septicemia in Man

A night watchman in a factory in East Africa, where hides were used, developed a condition resembling bubonic plague. No cutaneous lesions were visible but he had a solitary painful axillary bubo, dyspnea, blood-stained sputum, mental confusion, and a temperature of 103 F. *Bacillus anthracis* was recovered from a lymph node and from a lumbar puncture. He failed to respond to anthrax antiserum and penicillin therapy.—*J.A.M.A.*, April 9, 1955.

Treatment for Bone Spavin in Horses.—A technique for neurectomy of the peripheral nerves of the tarsus produced better results than combined neurectomy of the tibial and deep peroneal nerves. Of 59 horses lame with bone spavins, 42 were relieved by this operation.—*Vet. Bull.*, Feb., 1955.

What Is Your Diagnosis?

Radiograph Offered for Your Study and Diagnosis

Because of the interest in veterinary radiology, the JOURNAL publishes this month, and will continue to do so for the next several issues, a case history and accompanying radiographs depicting a diagnostic problem.

Make your diagnosis from the picture below — then turn the page ▶



Fig. 1—Radiograph of pelvis of patient.

History.—A 2-year-old dog was in good physical condition except for an occasional awkward gait of the hindquarters. The dog sometimes showed clumsiness in getting up from a sitting position. A radiograph was made of the pelvic region (fig. 1).

Diagnosis and Findings are reported on next page

Here Is the Diagnosis

(Continued from preceding page)

Diagnosis: Bilateral acetabular dysplasia and femoral head subluxation.

The problem of acetabular dysplasia and the accompanying subluxation is one that frequently confronts the practitioner. Questions provoked by such a case include:

- 1) Specifically, what is the cause of this condition? Is the breeder liable when such a pup is sold?
- 2) If the condition is congenital, is it a dominant or recessive factor?



Fig. 2—Radiograph of pelvis from a normal dog shown for comparison.

3) If this condition is hereditary, what steps should be taken to rid a breed of this defect? What members of the family should be eliminated from breeding—the sire, dam, litter mates?

4) Is nutrition a factor in the etiology of this malformation? If so, what diet is suggested for the dam, for the puppy?

5) Radiologically, how early can this defect be detected? Does the degree of dysplasia considered unsound vary in different breeds?

6) Radiologically, what degree of dysplasia should be considered unsound? Does the position of the hindlegs at the time the radiograph is taken help to portray the abnormality better?

7) A promising stud was given extensive radiological examination to determine whether his pelvis was sound. Upon maturity he failed to impregnate bitches. Could exposure to x rays be at fault? Could the veterinarian be held liable for causing the sterility?

8) If radiographs are taken do the films belong to the owner or to the veterinarian when the bill is paid?

Your comments on these questions are invited. What do you think?

This case was presented by Dr. William C. Banks, Department of Veterinary Radiology, Texas A. & M. College, College Station, Texas.

A Veterinarian Contracts Leptospirosis

Leptospira canicola infection occurred in two persons in Glasgow, Scotland. A woman became suddenly ill after nursing a sick dog for two weeks. Both had a high titer for *L. canicola*. A veterinarian also suddenly developed a headache, shivering, backache, vomiting, pyrexia (104 F.), and tachycardia (140). His finger had been cut

when a tube containing a culture of *L. canicola* had broken but he had immediately washed the wound with a solution of penicillin. Both patients responded promptly to liberal crystalline penicillin therapy. Of 12 previous patients with this infection, who were similarly treated, only one had made a satisfactory response. Success in all three was attributed to the early diagnosis and treatment.—*Brit. M. J.*, April 9, 1955.

Notes on a Recent Outbreak and Experimental Reproduction of Hepatitis X in Dogs

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THE PURPOSE of this article is to describe the third outbreak of hepatitis x observed in the southeastern states and to report experimental reproduction of the disease in dogs.

Hepatitis x, an apparent disease entity in dogs, is characterized by severe liver damage, icterus, and systemic hemorrhages.¹ The clinical symptoms are anorexia, depression, and icterus with absence of fever. Postmortem examination reveals icterus and marked yellowish, greenish yellow, or reddish yellow discoloration of the liver. There also is hemorrhage in various tissues and organs, particularly into the gastrointestinal lumen, presumably a terminal effect of the liver damage. Terminal hemorrhage appears to be the immediate cause of death.

The essential histopathological alteration of the liver is marked fatty change of the parenchymal cells. The fat occurs in the form of small vacuoles or is diffusely distributed throughout the cytoplasm so that the cytoplasm has a rarefied appearance. In some cases, there is considerable loss of parenchyma in the central part of the hepatic lobules. Lymphocytic and plasma cell infiltration occur around the central veins. There also are variable degrees of small bile duct proliferation and hepatic cell regeneration depending on the duration of the disease before fatal termination. The bile canaliculi may be distended with inappressed bile. The larger bile ducts are dilated and filled with a basophilic coagulum.

Most of the cases observed can be classi-

fied as subacute hepatitis on the basis of liver cell degeneration associated with bile duct proliferation and nodular foci of liver cell regeneration. In some instances, the disease is more acute, with little or no bile duct proliferation and no hepatic cell regeneration. A few cases can be classified as chronic hepatitis because loss of parenchyma, bile duct proliferation, and the development of nodular areas of liver cell regeneration have progressed sufficiently to result in distortion of the normal lobular hepatic architecture.

Hepatic fibrosis is not a prominent feature of this disease, but several of the chronic cases show some real or apparent fibrosis. The kidneys show swelling of the epithelium of the proximal convoluted tubules, which is often sufficiently pronounced to virtually close the lumen of the tubule. Some bile pigment is deposited in the renal epithelial cells, and there are bile-pigment casts in some of the tubules.

Intranuclear inclusions have not been found in the tissues of any dogs with hepatitis x. Kidney sections of a majority of the dogs involved in the first outbreak were examined for *Leptospira* organisms, with negative results.

HISTORY

The outbreak of hepatitis x described herein is the third encountered since the disease was first recognized during the fall, winter, and spring of 1951-1952 when a total of 31 cases (from Alabama, Florida, and South Carolina) were diagnosed at Auburn.¹ Judging from field reports, the number of cases diagnosed at Auburn during each outbreak represents only a small percentage of the dogs affected. The second outbreak occurred during the fall and winter of 1952-1953 when 12 cases (from Alabama and Mississippi) were diagnosed at Auburn.² The seasonal incidence of all outbreaks is illustrated in graph 1.

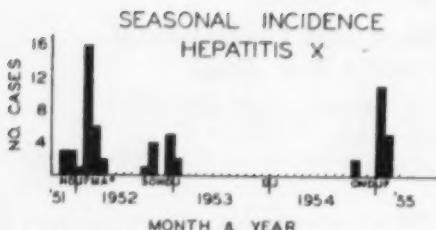
RECENT OUTBREAK

The latest outbreak occurred during the fall and winter of 1954-1955 with 18 cases (from Alabama, Georgia, and Florida) being diagnosed at Auburn. Judging from

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The authors acknowledge the cooperation of the following people whose assistance made this study possible: the practicing veterinarians who supplied specimens and feed samples; the manufacturer who supplied feed; Dr. H. D. Alexander (Department of Animal Husbandry and Nutrition, A.P.I.), who did the fat determination; and Dr. E. M. Jordan (Department of Small Animal Surgery and Medicine, A.P.I.), who helped in providing dogs for use in the feeding tests.



*The months are indicated by capital letters, i.e., N = November; D = December; J = January; F = February, etc.

Graph 1—Graph showing seasonal incidence of all outbreaks of hepatitis x to date.

the reports of practicing veterinarians, losses were heavy among kennels of hunting dogs. The disease occurred mainly in a circular area including southeastern Alabama, southwestern Georgia, and northwestern Florida. The histories indicated that all the dogs studied from this area, i.e., 16 of the 18 cases diagnosed at Auburn, had been fed a certain brand of commercial dog meal, either exclusively or as a part of the ration.

Five of the dogs in which histopathological diagnosis was made had the acute form of hepatitis x. The liver parenchyma showed marked fatty change but there was little, if any, bile duct proliferation or hepatic cell regeneration. However, the symptoms and the gross pathological alterations, including icterus, gastrointestinal hemorrhage, and marked yellowish discol-

oration of the livers, were characteristic of hepatitis x.

The other 13 dogs had the subacute form of the disease, showing marked fatty change of the liver along with small bile duct proliferation and focal hepatic cell regeneration. This is so distinctive, both grossly and histologically, that it constitutes a pathological entity without resemblance to, or apparent connection with, any other primary or secondary disease condition of dogs.

EXPERIMENTAL REPRODUCTION

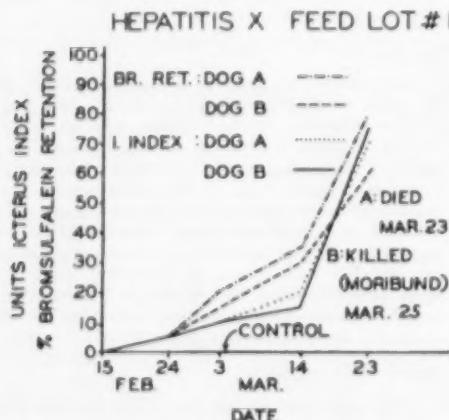
Three unsuccessful attempts to reproduce hepatitis x in dogs were made during and subsequent to the 1951-1952 epizootic. The first attempt was an effort to transmit the disease by inoculation of material from affected dogs into healthy experimental dogs of various ages.¹ None of the inoculated animals developed the characteristic clinical and pathological symptoms of the disease.

Efforts were then made to reproduce hepatitis x by feeding experiments. In one experiment, various amounts of pentachlorinated naphthalene were fed daily to several groups of dogs² because of its demonstrated hepatotoxic action. In no instance did the characteristic clinical and pathological picture of hepatitis x develop. Another experiment was conducted which involved the feeding of various especially prepared low protein diets.³ Ingredients which might normally be found in various dog meals were used in preparing the diets, and no known contaminant was added. This attempt to reproduce the disease was also unsuccessful.

In the present attempt to reproduce hepatitis x in dogs, five lots of the brand of dehydrated dog meal that had been fed to the animals with the clinical disease were obtained from various sources. Lots 1 and 2 had been stored in warehouses in different towns in the area where the outbreak occurred and were supplied by the feed manufacturer. Lot 3 was secured from a feed store in another affected community. Lots 4 and 5 were supplied by practicing veterinarians who obtained the feed from owners of kennels where dogs had died of hepatitis x.

Healthy dogs which were subjected to rigid pretrial physical and clinical pathological examinations were selected for the feeding trials. Two dogs were assigned to each of lots 1, 2, and 3. Only 1 dog was assigned to each of lots 4 and 5, since the quantity of meal in these lots was limited. Two additional dogs were designated as controls and were placed on the feed routinely used at the small animal clinic, Alabama Polytechnic Institute.

The following clinical laboratory procedures were performed on each dog periodically to determine whether any pathological alterations were in progress: (1) the bromsulphalein test for liver



Graph 2—Graph showing progressive elevation of icterus index and bromsulphalein retention in experimental dogs.

function; (2) the icterus index; and (3) a complete hemogram.

RESULTS

Lot 1.—The 2 dogs receiving this feed showed slight bromsulphalein retention and an elevated icterus index nine days following initiation of the experiment. A progressive increase in bromsulphalein retention and icterus index continued during the following eighteen days, with a marked elevation appearing on the thirty-sixth day (graph 2). Except for slight terminal leukocytosis and anemia, there were no significant changes in the hemogram. Both dogs showed anorexia on or about the thirty-first day. One dog (A) died on the thirty-sixth day, and the other dog (B) became moribund and was killed on the thirty-eighth day. Both dogs showed marked terminal depression, jaundice of the skin and mucous membranes, marked bilirubinuria, and blood in the feces. Each dog consumed approximately 50 lb. of feed during the test period.

On necropsy, both dogs showed icterus and marked hemorrhage into the gastrointestinal lumen. Both livers appeared smaller than normal, were markedly greenish yellow, and showed diffuse fine yellowish brown mottling in a lobular pattern.

Histopathological examination of the livers revealed severe, fine-droplet, fatty change of the parenchyma. The results of several quantitative analyses of the fat content of livers in experimental and natural cases of hepatitis X are given in table 1. Small bile duct proliferation was slight but definite in dog A, well marked in dog B. The presence of large quantities of inspissated bile in the intralobular bile canaliculi was the apparent cause of the mottling seen in both livers on gross examination. The gross and histopathological alterations observed in dog A were characteristic of acute hepatitis X; those in dog B were characteristic of subacute hepatitis X as observed in natural outbreaks of the disease. The histological comparison between the liver changes in dog B and a dog with a natural case of subacute hepatitis X is shown in figures 1 and 2.

Lot 2.—The 2 dogs receiving this feed have maintained normal appetites and have thus far failed to show any evidence of liver dysfunction or other pathological alterations.

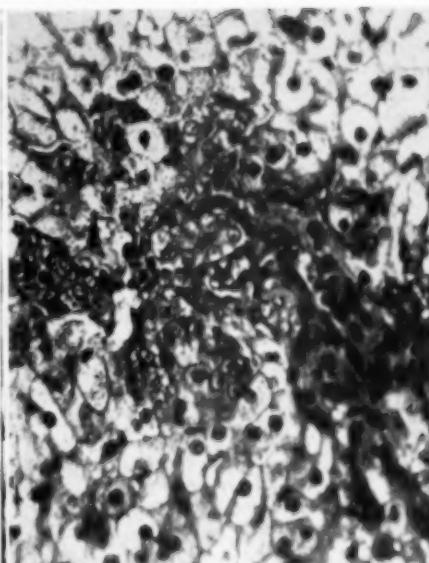


Fig. 1—Lesions of an experimental case of subacute hepatitis X (dog B, lot 1) showing fatty change of hepatic parenchyma and small bile duct proliferation. $\times 320$.

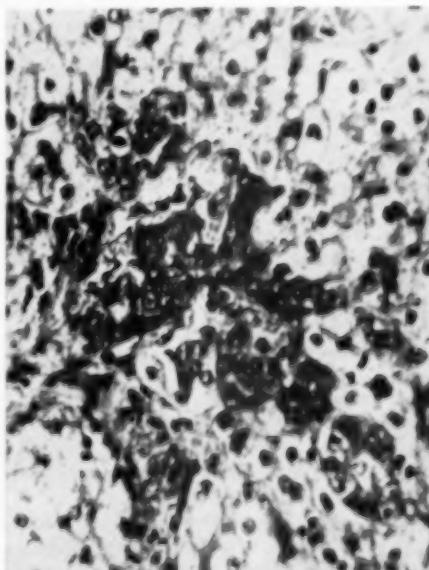


Fig. 2—Lesions of a natural case of subacute hepatitis X showing fatty change of hepatic parenchyma and small bile duct proliferation. $\times 320$.

TABLE I—Fat Content* of Livers of Dogs with Natural and Experimental Hepatitis X

Animal	Type sample	Percentage of fat
NATURAL CASES		
1†	Frozen	60.8
2	Formalin fixed	48.1
3	Formalin fixed	57.2
4	Formalin fixed	66.4
5	Formalin fixed	41.4
6	Formalin fixed	54.7
7	Formalin fixed	52.3
EXPERIMENTAL CASES		
Lot 1, dog A (proved)	Fresh	59.7
Lot 1, dog B (proved)	Fresh	73.8
Lot 5 (suspect)	Fresh	40.3
CONTROLS		
1. Normal dog	Fresh	4.5
2. [Diseased dogs	Fresh	13.8
3. [Died of diseases	Formalin fixed	14.8
4. [other than		
4. hepatitis x	Formalin fixed	11.6

*Calculated on basis of dry weight. †From second outbreak; other natural cases from third outbreak.

Lot 3.—Of 2 dogs being fed meal from lot 3, 1 dog (A) showed 20 per cent bromsulphalein retention but no increase in icterus index after ten days, and 65 per cent bromsulphalein retention and 15 units icterus index after forty-five days. The other dog (B), which had eaten very little feed, showed 10 per cent bromsulphalein retention and no increase in icterus index after forty-five days. A third dog (C), which showed 10 per cent bromsulphalein retention and no increase in icterus index when moved from lot 4 (see below), showed 40 per cent bromsulphalein retention and 10 units icterus index after twenty-four days on lot 3. Dog A, which died on the forty-sixth day, showed marked terminal depression, slight jaundice of the skin and mucous membranes, marked bilirubinuria, and blood in the feces. A total of approximately 40 lb. of feed was consumed by dog A during the test period.

On necropsy, the carcass was moderately icteric; the liver appeared smaller than normal, was yellow, and showed diffuse, fine, yellowish brown mottling in a lobular pattern. There was much free blood in the gastrointestinal lumen. Histopathological examination of the liver revealed severe fatty change of the parenchyma and well-marked, small bile duct proliferation characteristic of subacute hepatitis x.

Lot 4.—The dog being fed meal from lot 4 showed slight bromsulphalein retention (10%) on the twenty-fifth day, but at this point the supply of feed (23 lb.) was exhausted. This animal was then moved to lot 3 for additional feeding.

Lot 5.—The dog being fed meal from lot 5 showed marked bromsulphalein retention (60%) on the fourteenth day, but the degree of retention gradually receded during the following twenty-two days. The icterus index showed slight to moderate elevation after fourteen days and remained fairly constant thereafter. Since the supply of feed (40 lb.) was almost exhausted, and the results of tests were showing a slow return toward normal, the dog was killed on the thirty-sixth day.

On necropsy, the only remarkable abnormality was slight to moderate discoloration of the liver, of lesser degree than has been characteristic of hepatitis x. Histopathological examination revealed moderate fatty change of the liver parenchyma, some lymphocytic infiltration around the central veins, and minimal small bile duct proliferation. Thus there was evidence of liver damage, but the changes observed grossly and histopathologically would not have been classified as hepatitis x in routine objective pathological diagnosis.

SUMMARY

Data are presented on an outbreak of hepatitis x occurring from October, 1954, through February, 1955. Sixteen of the 18 cases studied by the authors had been fed a certain brand of commercial dog meal. Feeding tests were initiated, using five lots of this feed. To date, dogs fed experimentally on two of the lots have died of hepatitis x. The studies are being continued.

References

- Seibold, H. R., and Bailey, W. S.: An Epizootic of Hepatitis in the Dog. *J.A.V.M.A.*, 121, (1952): 201-206.
- Seibold, H. R.: Hepatitis X in Dogs. *Vet. Med.*, 48, (1953): 242-243.
- Newberne, J. W.: Unpublished data.
- Newberne, J. W.: Unpublished data.

Anthrax in Man from Bone Meal

In Wales, most cases of anthrax in man reportedly can be traced to contact with sun-dried bone imported from the Far East. Six patients in Scotland also had contact with bone meal from the Far East, which was used as fertilizer. *Bacillus anthracis* was isolated from three of the five available samples of this bone meal.—*J.A.M.A.*, April 30, 1955.

Vaccine for Avian Lymphomatosis

On April 4, the U.S.D.A. announced that a vaccine developed at the U. S. Regional Poultry Research Laboratory, East Lansing, Mich., and used on hens, had given a high degree of protection to chickens hatched from their eggs. These 14 White Leghorn hens were of a strain highly susceptible to the disease, yet most of the 300 chicks were highly resistant to challenge whereas two thirds of the chicks from the same hens before they were vaccinated died following similar challenge. The vaccination method includes thrice-weekly intravenous injections of the virus vaccine for five weeks.—U.S.D.A., April 4, 1955.

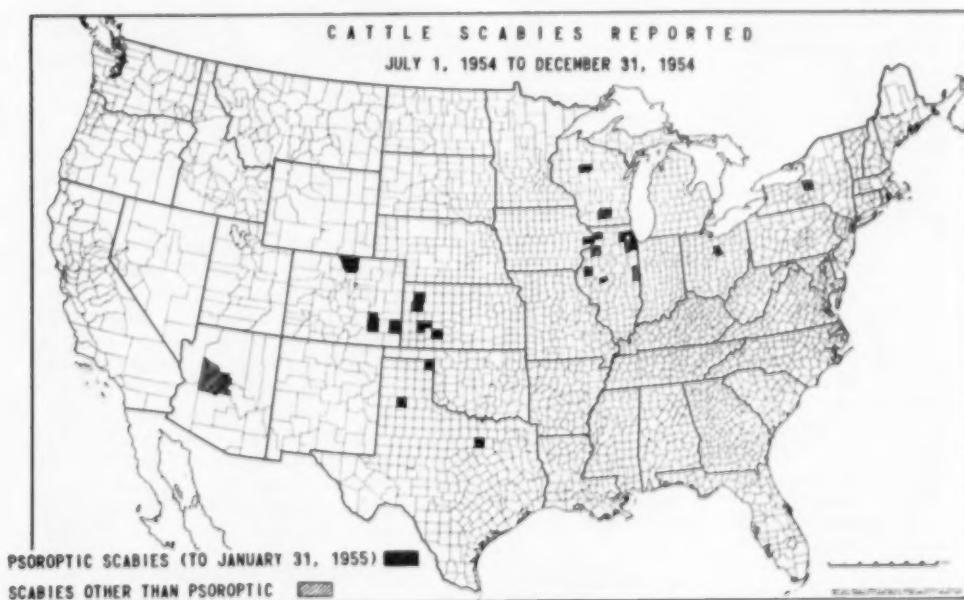
Poultry Parasites and "Deep Litter"

In 12 poultry houses where "deep litter" was used, more parasite ova and oocysts were found when the moisture content was high, usually due to leakage of drinking appliances or the use of long straw. The

presence of free ammonia had only a limited effect on the ova and oocyst numbers. When litter samples were packed in a vacuum flask, the heat generated significantly reduced the number of oocysts but, in open pens, the temperatures attained in the depth of the litter did not eliminate oocysts and ova and may even have favored their development.—*Vet. Rec.*, March 12, 1955.

Diseases Transmitted by Endoparasites

The role of endoparasites in the transmission of an infectious agent is known in the case of three diseases of higher animals and may be discovered in others. A virus is transmitted by a lungworm in swine influenza, a protozoan is transmitted by a nematode in "blackhead" of turkeys, and a protozoan is transmitted by a fluke in salmon poisoning of dogs. No bacterial disease transmitted by a helminth has yet been discovered.—*J. Parasitol.*, April, 1955.



During the last six months of 1954, psoroptic mange in cattle was reported in five counties in Colorado, 4 counties in Kansas, three counties in Texas, and in the Chicago stockyards. All were traced to cattle originating in Colorado. The Colorado counties are quarantined and all cattle removed from these areas must be treated with BHC dip containing 0.075 gamma isomer.

The Use of Hydrocortisone in the Treatment of Joint and Tendon Disorders in Large Animals

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Davis, California

ALTHOUGH IMPROVED methods have been developed for the treatment of inflammatory conditions of the locomotor system in general, little progress has been made in this phase of equine practice. In man, the aspiration of joints and synovial spaces has been performed for many years, although only recently has joint paracentesis^{1,2} become established as a diagnostic procedure. In horses, almost every disease of the articular, ligamentous, or synovial structures of the legs has traditionally been subjected to blistering agents and firing. These techniques are still the most commonly used corrective measures. Both of these practices have a limited justification in modern veterinary medicine. Many believe that they are of little value, merely cause the animal needless discomfort, and that their only advantage is that they cause the animal to be rested because of the trauma induced.

In 1951, Hollander *et al.*³ demonstrated that the introduction of cortisone or hydrocortisone⁴ into synovial cavities frequently produced marked reduction in both the inflammation and pain in certain types of arthritis of man. Therefore, in the past two years we have been attempting to evaluate hydrocortisone in the treatment of parallel conditions in large animals. Tendonitis, tenosynovitis, and joint inflammations are some of the disorders treated by injection of the compound directly into the synovial cavity or inflamed tissue. The results to date on 94 cases indicate that this therapy is superior to previous methods of reducing inflammation. The animals treated, with few exceptions, responded quickly. Within twelve hours, the swelling was often reduced, the pain decreased or absent, and the inflammatory processes controlled. Following this procedure, the relief was often permanent when the limb was given sufficient rest.

From the School of Veterinary Medicine, University of California, Davis.

⁴The hydrocortisone used in this series of cases was furnished through the courtesy of Merck and Company, Rahway, N. J.

TECHNIQUE

Many veterinarians have been reluctant to enter a joint cavity because of a fear either of introducing infection or of an imagined difficulty in performing the operation. Both are possible, but they occur more rarely than commonly assumed. Aspiration of the fluids from distended joint cavities and tendon sheaths has definite value in diagnosis and treatment.^{1,2} If proper aseptic precautions are followed, there is little danger of introducing infection. In most cases, the aspirating needle is inserted easily and quickly into the cavity without the use of a local anesthetic. A review of the anatomy of the structure involved, with close attention to external landmarks, will usually assure the proper placing of the needle. Perhaps the best rule to follow in choosing the insertion site is to use what appears to be the route of easiest access.

If the aspirated synovial fluid is clear and viscous, it can be assumed that the effusion is due to trauma or strain and that the fluid is sterile. Stained smears of this type of synovia show a low number, usually 100 or less per cubic millimeter, of mononuclear cells. If the aspirated fluid is cloudy, less viscous than normal, and contains flocculent particles, an infection⁵ should be suspected. A Gram's-stained smear of this type of fluid reveals cell counts of 5,000 to 10,000 or more per cubic millimeter, plus a cell type change to polymorphonuclear cells. A bacteriological examination, which should be carried out on this type of fluid, not uncommonly reveals a Streptococcus infection.

Following the aspiration of synovia, hydrocortisone is injected easily and without force. This can ordinarily be performed while leaving the needle *in situ* by merely exchanging syringes.

TREATMENT AND RESULTS

The conditions treated and the results obtained are shown in table 1. The 94 cases shown were treated over a period of three years and none have been terminated less

TABLE I—Conditions Treated with Hydrocortisone Therapy* and Results Obtained

Condition	Species and No. of cases	Complete recovery	Improvement	Failure
Osteoarthritis of the stifle	2 cattle	2
Synovitis of the fetlock joint	39 horses	27	11	1
Synovitis of the carpus	21 horses	13	7	1
Osteoarthritis of carpus	8 horses	...	6	2
Tenosynovitis of deep flexor tendon (1 bull at the hock)	16 horses	5	2	...
Synovitis of tarsal joint	10 horses	7	3	...
Navicular bursitis	1 horse	—	—	1
Tendonitis	6 horses	1	5	...

*Hydrocortisone therapy terminated six months or longer before results were tabulated.

than six months. This is sufficient time to indicate that the results are more than temporary.

Joint Inflammations.—The fetlock, carpal, and tarsal joints are frequently the sites of traumatic injuries and excessive strain. Such injuries result in impaired

function, swelling, distention of the joint capsules, and blemishes which laymen call "wind puffs," "bog spavins," "popped" knees, etc. Aspiration of synovia, followed



Fig. 1—Aspiration of the hock joint showing site of needle insertion on the anteromedial distention of the joint capsule. The anterolateral or posterolateral distention of the joint capsule also may be used.



Fig. 2—Injection of the carpal joint. By flexing the carpus, the space between the carpal bones is enlarged, thus permitting entrance into the joint cavity without danger of striking the bones.



Fig. 3—Fetlock joint injected with radiopaque substance to demonstrate the extent of the joint cavity and the dorsal extension of the joint capsule.

by injection of 50 mg. of hydrocortisone into a fetlock joint or 75 mg. into a carpal or tarsal joint, gives marked relief from symptoms of local inflammation. In many cases, a single injection resulted in complete, permanent relief, unless the part was reinjured.

Tenosynovitis and Bursitis.—Aspiration of the excess fluid from distended tendon sheaths and bursas was followed by the injection of 50 to 100 mg. of hydrocortisone, depending on the size of the structure involved. The results in most cases were remarkably prompt. Marked reduction of swelling and effusion occurred within twenty-four hours. In many cases of tenosynovitis of the deep flexor tendon at the hock ("thoroughpin"), it has been possible to aspirate 60 to 80 cc. of fluid from the tendon sheath, after which a single injection of 75 mg. of hydrocortisone produced a distinct improvement.

Bulls showing this condition are most

frequently young animals which are heavily fitted for show purposes. Their great weight thus puts excessive strain on the supporting structures of the legs. One bull with a tenosynovitis of the deep flexor tendons of both rear limbs was successfully treated by the aspiration of 65 cc. of fluid and the injection of 100 mg. of hydrocortisone into each tendon sheath.

Tendonitis (Bowed Tendon).—In a limited number of equine cases of acute inflammation of the deep flexor tendon, the affected tendon has been infiltrated with hydrocortisone and the leg placed in a plaster cast for about eight weeks. Usually, 100 mg. of the hormone was used with gratifying results. The swelling and soreness receded rapidly, the animals often being returned to service within twelve weeks.

Navicular Bursitis.—The 1 case of equine navicular bursitis treated by injection of hydrocortisone showed no change. This may have been due to failure to deposit the drug within the navicular bursa since it was not



Fig. 4—Injection of the fetlock joint. Site of injection is between the metacarpal bone and the suspensory ligament, at which point there is a thin-walled pouch of the joint capsule extending upward as high as the bifurcation of the suspensory ligament. Inflammation of this joint causes distention of the dorsal pouches of the joint capsule.

possible to accurately determine the position of the needle at the time of injection. This emphasizes the value of familiarity with the anatomy of an area and of practice in injecting joints of poor accessibility.

Osteoarthritis.—Two bulls with an extensive osteoarthritis of the stifle were treated by injection of hydrocortisone into the affected joint without noticeable improvement. Earlier therapy, when less permanent damage existed in the cartilage and bone, might have produced a more favorable response. It has almost become a maxim that where anatomic or structural changes have occurred in the joint, nothing beyond a transient relief can be expected from intra-articular treatment. The mechanical lameness resulting from these processes is not altered.

DISCUSSION

Although the intrasynovial use of hydrocortisone has produced highly successful results in disorders involving synovial structures, it should be emphasized that it is not a catholicon. As with all drugs, certain limitations to its usefulness exist.⁵ Animals with osteoarthritis do not show as much improvement from the use of hydrocortisone as do those with inflammations affecting only the soft tissues. The drug may provide temporary relief from inflammation and, thus, improved action of a joint during periods of rest or mild exercise. However, under the stress of racing or hard use, pain and lameness may again become evident.

The relief of pain and inflammation by hydrocortisone therapy does not necessarily indicate the completion of the healing process. To return a horse to work immediately after the cessation of symptoms may hasten the complete breakdown of the injured part. This feature of hydrocortisone therapy can not be overemphasized to trainers and owners. It is imperative that an adequate rest period be given in conjunction with this therapy if results of any permanent value are to be expected.

If infection is suspected in the structure to be treated, a bacteriological examination and cell count of the aspirated synovial fluid should be made. When infection is present, it should be eliminated by the injection of antibiotics into the infected cavity or tissue before hydrocortisone therapy is started. In doubtful cases where

a bacteriological examination is not immediately feasible, a combination of hydrocortisone with penicillin and streptomycin is indicated. This avoids the possibility of a flare-up of an infectious process. This procedure has not resulted in any adverse reaction and the antibiotics have apparently not interfered with the action of the hydrocortisone.

References

- Bauer, W., Ropes, M. W., and Waine, H.: The Physiology of Articular Structures. *Physiol. Rev.*, 20, (1940): 272.
- Kling, D. H.: The Synovial Membrane and the Synovial Fluid. M. Press., Los Angeles, 1938.
- Hollander, J. L., Brown, E. M., Jr., Jessar, R. A., and Brown, C. Y.: Hydrocortisone and Cortisone Injected into Arthritic Joints. *J.Am.M.A.*, 147, (Dec. 22, 1951): 1629.
- Hollander, J. L.: Intra-Articular Hydrocortisone in the Treatment of Arthritis. *Ann. Int. Med.*, 39, (Oct. 1953): 735-746.
- Cyriax, J., and Troisier, O.: Hydrocortone and Soft Tissue Lesions. *Brit. M. J.* (Oct. 31, 1953): 966-968.

Industrial Molybdenosis in Cattle

A high intake of molybdenum can reduce copper storage in the livers of cattle and sheep but apparently only when adequate levels of inorganic sulfate are also present. This produces a copper deficiency, the signs of which include severe diarrhea and unthriftiness. This condition can be overcome by increasing the copper intake. On two farms in England, these symptoms appeared annually, increasing during the grazing season, then receding during the winter. The farms were near an industrial plant and upon analysis the grass had a high molybdenum content. The copper in the blood of these animals was found to range from 0.016 to 0.06 mg. per 100 ml., whereas 0.1 mg. per 100 ml. is accepted as normal. When 5.0 Gm. of copper sulfate was given in a weekly drench, the animals showed a marked improvement.—*Vet. Rec.*, April 9, 1955.

Charbray Calves Sell Well.—In Houston, Texas, 54 Charbray calves, a relatively new breed developed by crossing Charolais with Brahman cattle, sold for \$50,000, averaging almost \$1,000 per head.—*The Cattlemen*, May, 1955.

The Recovery of *Leptospira Pomona* from Two Herds of Cattle and Observations on Selected Cases from Thirty-Eight Infected Herds in California

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BOVINE LEPTOSPIROSIS has no doubt been present in California for many years. In 1946, a disease entity of cattle was investigated by Emminger *et al.*¹ The symptoms of the condition were: hemoglobinuria, depressant effect on milk production, discoloration of milk, and icterus. Temperatures in excess of 103.0 F. occurred in 24 of 37 animals and in some cases temperatures were reported to be as high as 107.0 F. Petechiae of the epicardium and cortex of the kidney were reported. Intravenous passage of blood to a 2-week-old calf from an animal in the febrile stage resulted in hemoglobinuria and a temperature rise to 105.6 F. on the ninth day postinoculation. Tissues from the affected animals were submitted to a laboratory, but no etiological agents were identified.

Subsequently, in 1950,² Taylor and De-Lay reported finding organisms resembling *Leptospira* in tissue sections of kidneys taken from animals which had shown hemoglobinuria, marked thermal response, and icterus. Attempts to recover *Leptospira* organisms were unsuccessful.

This report describes the first isolation of *Leptospira pomona* from cattle in California, and includes the laboratory findings on specimens from adult cattle and calves of 40 herds examined in 1950-1951. The organism was recovered from two herds and the disease was artificially reproduced in calves.

MATERIALS AND METHODS

The specimens were submitted by veterinarians from widely separated areas throughout California. Most specimens were shipped by bus, arriving at the laboratory after having been enroute for periods varying from eight to eighteen hours and,

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The authors are indebted to Dr. Wm. S. Gochenour, Jr., for assistance in the identification of *Leptospira* isolates, and to J. C. Rucker and E. J. Murphy for technical assistance.

as a result, were unsatisfactory for propagation trials but were suitable for histopathological examination.

The modification of Wharton's staining technique³ was used for demonstration of leptospires in tissues. Guinea pigs and hamsters were used as test animals. Kidney and liver suspensions, urine and, occasionally, milk specimens were used as inoculum. The urine of the guinea pigs was examined ten days following inoculation and daily through the twentieth day postinoculation. Schuffner's modification of Verwoert's medium was used for artificial cultivation.

Serological tests were conducted using the macroscopic agglutination test and formalized antigen. The serum-antigen mixtures were made in conical tubes, 7.5 by 1.0 cm. The antigen was grown in Schuffner's medium, using *L. pomona* (Amsterdam 9). The cultures were incubated at 30.0 C. and usually reached the height of their growth in six days. Each tube or flask was checked for density of growth and for evidence of weak agglutination. Cultures were inactivated by the addition of 0.5 per cent formalin, C.P.* Following twelve hours of storage, the antigen was ready for use. Tenfold serum dilutions in saline through 1:10,000 in 0.5-ml. amounts were placed in the conical tubes. To each tube of diluted serum, 0.5 ml. of antigen was added and the tubes were shaken. The serum-antigen dilutions were incubated for twelve hours at 37.5 C. and held six hours at room temperature, after which the first reading was made. The final reading was made following an additional twelve hours at room temperature.

A positive reaction is characterized by the appearance of grossly visible, fluffy clumps; however, the end point titer is determined by microscopic examination. Controls included antigen plus positive serums, antigen plus saline, and negative serum plus saline. In the negative tests, the 1:100 dilution was checked microscopically for evidence of slight agglutination.

RESULTS

Morbidity and Mortality.—It is not possible to describe or to affix a descriptive pattern for morbidity on the basis of present information because of marked differences in individual herds. Further, there was also a striking lack of similarity in

*C.P. = chemically pure.

the symptomatology of the disease in adult cattle and in calves.

Most of the cases described in this report involved adult animals, while the remaining infections were in animals under 5 months of age. The mortality in the adults was extremely low; in many of the herds no losses were encountered. The presence of hemoglobinuria was usually accepted as a basis for determining morbidity which varied from 10 to 80 per cent. There seemed to be less tendency for the disease to be widespread in a given herd of calves, although the mortality exceeded that encountered in the adults. Rarely did losses exceed 10 per cent in calves, but in one herd 13 of 15 affected calves died.

Symptoms in Calves.—The symptoms observed in calves included depression, severe dyspnea and prostration following exercise, temperatures to 107.0 F., icterus, and hemoglobinuria. Red cell counts were found to be as low as 2,500,000 per centimeter of blood.

Many of the animals showing the above symptoms were in an excellent state of nutrition, an observation which indicates the rapid development of the pathological process. Most of the cases submitted involved animals raised under range conditions, therefore, further limiting the opportunity to observe symptoms.

Symptoms in Adults.—Most cases of infection in adults involved dairy cattle, possibly because symptoms were more easily detected by the owner under conditions of dairy management, whereas similar symptoms would have escaped detection in animals raised under range conditions.

The symptoms most commonly reported were hemoglobinuria, mild icterus, rise in temperature, and a depressant effect on lactation. Abortions also occurred in several herds concurrent with the *Leptospira* infection. In none of these cases was the cause of abortion determined, but circumstantial evidence does indicate their probable relation to the *Leptospira* infection.

Pathology, Gross.—Gross pathology of the kidney was uniformly found in the form of minute, round foci resembling petechia, although occasionally gray foci 3 to 5 mm. in diameter were also encountered. These lesions were level with the surrounding cortical surface and were similar to those observed in swine with hog

cholera. Subepicardial hemorrhages also were present. The liver frequently presented a glazed surface, with an accumulation of bile which usually had a viscous consistency. The urinary bladder was uniformly distended and filled with port wine-colored urine. Mild to marked icterus was found, particularly in fatal cases in calves.

Pathology, Microscopic.—Of the 40 cows with leptospirosis described in this report, 21 were found to harbor *Leptospira* organisms in stained preparations of kidney tissue. An additional 14 animals, all having a clinical history suggestive of leptospirosis, were examined histopathologically, with negative results.

Microscopic examination in most cases failed to show damage to kidney tissue in proportion to the severity of symptoms. A marked focal infiltration of lymphocytes in the cortical portion of the kidney was demonstrated (fig. 1). Rarely was there

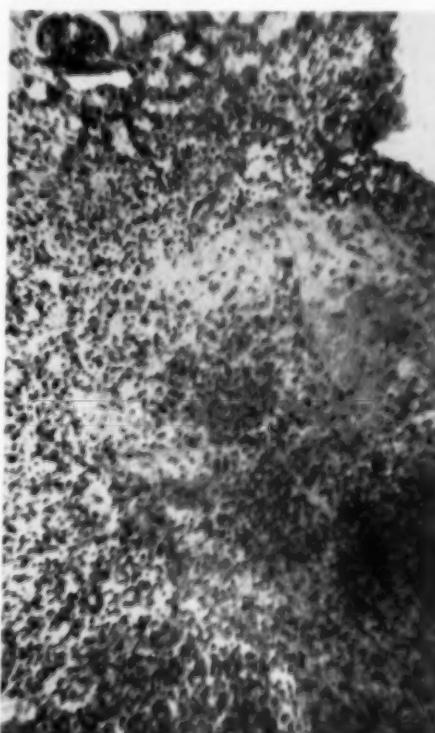


Fig. 1.—A section of renal cortex showing degeneration and lymphocytic infiltration; magnified $\times 66$ and photographically enlarged approximately $\times 2$.

evidence of extensive or diffuse hemorrhage in the kidney tissue. The leptospiros were not found in tissues other than kidney, except for those cases where positive dark fields were observed in the examination of urine specimens. However, in only a few cases were tissues other than kidney examined. Occasionally only 1 organism was observed in a given area (fig. 2). The

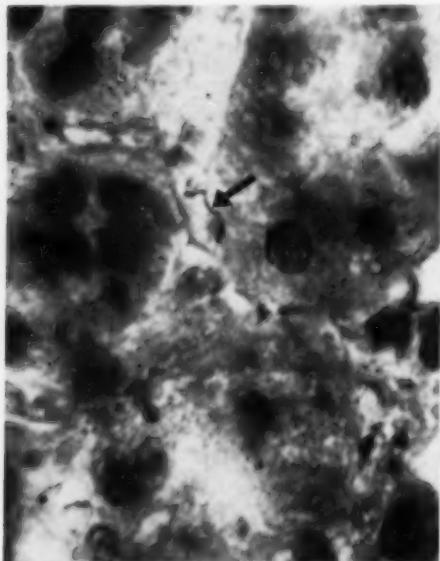


Fig. 2—A section of renal tissue showing a single *Leptospira* organism; magnified $\times 666$ and photographically enlarged approximately $\times 2$.

organism was frequently found adjacent to the walls of the tubules. Rarely were more than a few areas in a given section found to harbor *Leptospira*. Nests or groups of the organism were seldom found in kidney tissue.

ISOLATION

Leptospira pomona was recovered from the tissues of a calf and from a pooled milk and urine sample taken from a Holstein-Friesian cow. A brief description of these 2 cases, including some details of the isolation procedures, is presented.

Isolation from Calf.—The herd from which this animal was obtained included 15 Herefords, 4 months of age. The death of 8 animals occurred approximately two months after they had been placed on per-

manent pasture. It was the owner's opinion, because of his observation of symptoms, that all of the animals had died from a similar cause. Tissue specimens from 1 of these calves were examined at the laboratory within an hour following its death.

The postmortem observations were similar to those described previously in this report. Dark field examinations of urine were positive for spirochetes resembling leptospiros, although blood examinations were negative. Results of similar examination of kidney suspensions were inconclusive. Leptospiros were found in histopathological sections of kidney tissue. However, attempts to propagate the organism in Schüffner's medium seeded with kidney tissue and urine were unsuccessful.

Guinea pigs 1 and 2 were inoculated intraperitoneally with kidney tissue of the affected calf. Temperatures of 102.9 and 102.7 F., respectively, developed on the fourth and seventh days in these guinea pigs. Daily examination of the urine, starting on the tenth day following inoculation, failed to show the presence of leptospiros. On the twenty-sixth day postinoculation, 1 cc. of urine from guinea pig 1 was injected intraperitoneally into guinea pig 3. Spirochetes were observed in the urine of guinea pig 3 on the eighteenth day postinoculation. The organism was propagated in artificial medium and was subsequently identified as indistinguishable from *L. pomona*.

Isolation from Cow.—Milk and urine specimens were submitted from this animal by a local veterinarian. The specimens arrived at the laboratory less than one hour following collection. The animal was described as having a temperature of 104.2 F., hemoglobinuria, inappetence, pink-tinged milk, and a markedly reduced lactation. Dark field examination of the specimens immediately upon arrival at the laboratory failed to demonstrate the presence of spirochetes. The milk and urine were mixed and the pooled sample inoculated into guinea pigs 36 and 37. On the sixth day following inoculation, guinea pig 36 showed a temperature rise to 103.0 F. and died twenty-one days postinoculation. On necropsy, kidney lesions were present and *Leptospira* were found in peritoneal fluid.

On the seventh day postinoculation, guinea pig 37 had a thermal response of 103.0 F., and on the twenty-ninth day this

TABLE I—Clinical and Laboratory Data on Animals Representing 40 Bovine Herds in which Hemoglobinuria was Noted

Group (No.)	No. of herds	Sym- ptoms	Lesions	Serology		Histology		Dark field		
				Bovine patient	Guinea pig	Bovine patient	Guinea pig	Bovine patient	Guinea pig	Culture
1	13	+	+	—	—	—	—	—	—	—
2	3	+	—	+	—	—	—	—	—	—
3	14	+	+	—	—	—	—	—	—	—
4	4	+	—	+	—	—	—	—	—	—
5	1	+	—	—	—	—	—	—	—	—
6	2	+	+	+	+	—	—	+	—	—
7	1	+	+	—	—	—	—	—	—	—
8	1	+	+	+	+	—	—	—	—	—
9	1	+	—	—	—	—	—	—	—	—
Totals	40	40	31	10	4	21	4	3	3	2

animal was destroyed. The kidneys presented a mottled appearance, and minute raised white foci were noted on the surface of the liver. Pooled kidney and urine suspensions were found, on dark field examination, to harbor spirochetes. From a second guinea pig passage, using tissues from pig 37 as inoculum, the leptospires were propagated in artificial mediums and subsequently identified as indistinguishable from *L. pomona*. The organism was also recovered from the urine of hamsters twenty-four days following injection with kidney tissue suspension of guinea pig 36.

Serology.—Eleven herds in which symptoms of Leptospira infection had been observed were subsequently found to harbor animals whose blood titers for *L. pomona* were 1:10,000 or higher.

TRANSMISSION

The organism which had been recovered from calves, as previously described in this report, was used as inoculum for transmission trials. An initial attempt to reproduce symptoms in calves with this culture failed. One 30-lb pig, inoculated intraperitoneally with urine from guinea pig 37, developed a thermal response with a maximum reading of 107.0 F. When killed six weeks postinoculation, *L. pomona* was recovered from the kidney.

When calf A was 10 days old, it was injected intraperitoneally with 5.0 ml. of the culture recovered from the porcine kidney. The calf developed symptoms, including hemoglobinuria, on the fourth day postinoculation and when killed two days later, Leptospira were found in the urine.

Second Generation Calf Trials.—Two 10-day-old calves, B and C, were inoculated with pooled kidney and liver suspension and urine of calf A, respectively, and 10-day-

old calf D was fed 25 ml. of a Leptospira culture propagated from the tissues of calf A. Calf D died on the eleventh day and calf B on the ninth day postinoculation. Both had a marked thermal response, hemoglobinuria, severe depression, icterus, and anemia. The cortex of the kidneys showed chocolate brown coloring and was studded with small round foci. Leptospira were cultivated in Schüffner's medium which was seeded with tissue material of calves B and D. Calf C which had received urine from calf A remained unaffected.

SUMMARY

This report includes observations on a disease entity affecting calves in 1946. Although the etiology was not determined and leptospirosis apparently was not suspected, it may in retrospect be concluded that the calf losses were the result of Leptospira infection.

During a two-year period, 1950-1951, inclusive, bovine leptospirosis was frequently encountered. However, the increase was possibly more apparent than real, because of the more extensive application of diagnostic procedures specifically designed for leptospirosis.

Leptospira pomona was recovered from animals in two infected herds. The presence of the disease was also confirmed by demonstrating the organism in kidney tissue, or by serological methods in 25 herds. The results of artificial transmission trials are also described. Symptoms and lesions were noted in 13 additional herds; however, in them, laboratory studies failed to confirm the diagnosis of leptospirosis.

References

¹Emminger, A. C., Duckworth, R. E., and Outhier, C. B.: Personal communication, 1946.

²Taylor, C. E., and DeLay, P. D.: Losses in Cattle

Apparently the Result of Leptospira Infection. California Vet. (July-Aug., 1950): 20.

¹Lillie, R. D. L.: Histopathologic Technic. The Blakiston Co., Philadelphia, 1948.

A Simple Direct Technique for Counting Avian Blood Cells

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Little difficulty is encountered in counting avian erythrocytes; however, the enumeration of avian leukocytes presents certain problems not met with in counting mammalian leukocytes. Since avian erythrocytes are nucleated when the standard methods for counting mammalian leukocytes are used, the red cell nuclei make it impossible to differentiate between them and the leukocytes. Many diluting fluids¹ have been introduced to stain both the erythrocytes and leukocytes to facilitate the counting. The majority of these solutions are composed of many reagents not commonly available in diagnostic laboratories.

Olson² recommends Wiseman's method for the routine study of fowl blood. This is an indirect method and may yield inaccurate results in some instances, e.g., granulocytopenia.

It has been stated by DeVilliers¹ and others that it is difficult to distinguish with certainty between avian thrombocytes and small lymphocytes under the magnification that can be used in conjunction with the counting chamber. This statement was made with reference to diluting fluids containing dyes which preserve and stain leukocytes and erythrocytes.

The present paper describes a diluting fluid for direct avian blood counts which stains erythrocytes and leukocytes differentially.

PROCEDURE

A simple diluting fluid for avian blood was prepared from the following materials:

Certified Giemsa stain*	10 ml.
Neutral formalin	5 ml.
Isotonic 0.85 per cent sodium chloride solution	85 ml.

Neutral formalin is prepared by adding an excess of calcium carbonate to com-

mercial formalin. When measuring the neutral formalin, shake the bottle so that some of the excess calcium carbonate will be transferred with the solution. Add this to the salt solution and mix well. Filter the solution through ash-free filter paper. Add the Giemsa stain and mix well. Filter the solution again through ash-free filter paper.

The solution stains the blood cells best when the pH is near 7. If the blood cells are stained too blue, add a few drops of dilute acetic acid to the diluting fluid to develop the proper staining reaction. The diluting fluid will keep for a long time in a stoppered bottle under refrigeration; however, if avian blood counts are not made frequently, the diluting fluid should be prepared immediately before use.

Making the Count.—Method 1.—The red cell-diluting pipette is used for both red and white cell counts. The pipette is filled with blood to the 0.5 mark, and then with the diluting fluid to the 101 mark. This gives a dilution of 1:200. Shake the pipette to mix the blood and diluting fluid thoroughly. Apply a broad rubber band over the ends of the pipette and keep overnight in the refrigerator for maximum staining reaction. Actual counts are made in the same manner as for mammalian blood. For details of blood-counting technique, a standard book on hematology³ could be consulted. The use of a bright-line counting chamber, a $\times 10$ eyepiece, and a $\times 43$ objective provides sufficient magnification to differentiate between small lymphocytes and thrombocytes. Some experience is necessary before reasonable accuracy is attained.

Method 2.—For highly accurate work, a Helber counting chamber can be used for making erythrocyte and leukocyte counts. The ruling on the chamber is the 1/400-mm.² improved Neubauer pattern with a cell depth of 1/50 mm. The chamber is identical with the regular blood-counting chambers with the exception of the depth. The Helber counting chamber permits critical focusing with an objective with a numerical aperture as high as 1.30 (oil immersion). Under this high magnification, all cell types may be easily identified and counted. As the volume of the Helber chamber is one-fifth that of the regular blood-counting chamber, a blood dilution of 1:50 or 1:20 should be used. This low

From the Department of Veterinary Pathology and Hygiene, College of Veterinary Medicine and Agricultural Experiment Station, University of Illinois, Urbana.

*From the Gradwohl Laboratories, St. Louis, Mo.

dilution will contribute to the accuracy of the leukocyte count. The blood is diluted in a white cell pipette, using the same technique as described before. In a limited number of trials using the Helber chamber, the distribution of blood cells in the counting chamber was satisfactory. When actual counts were made on the same sample of blood using the Helber chamber and a Spencer bright-line chamber, the results agreed within the probable inherent errors in blood counting. A more extensive investigation is necessary before the accuracy of the proposed method can be established.

The count should be made under the high power objective of the microscope, and the oil immersion objective should be resorted to only when necessary.

If the 1:20 dilution is used along with the Helber chamber, using the same methods as for mammalian blood, the multiplication factor for the erythrocytes is 5,000 and that for the leukocytes is 250.

SUMMARY

A simple technique is described for counting avian erythrocytes and leukocytes. The blood is diluted in a blood-diluting pipette with a solution consisting of 0.85 per cent sodium chloride, 85 per cent; neutral formalin, 5 per cent; and Giemsa stain, 10 per cent. It is kept in a refrigerator overnight to allow the cells to become stained. Counts are then made either in a hemacytometer or in a Helber counting chamber. With the latter, the oil immersion objective can be used in cases of difficulty in distinguishing between small lymphocytes and thrombocytes.

References

DeVilliers, O. T.: Blood of the Ostrich. *Onderstepoort J. Vet. Sci. and Anim. Indust.*, 11, (1938): 419-504.
Olson, C., Jr.: Avian Hematology. In "Diseases of Poultry" by H. E. Bieser and L. H. Schwartz, 3rd ed. The Iowa State College Press, Ames, Iowa, 1952.
Wintrobe, M. M.: Clinical Hematology. 3rd ed. Lea and Febiger, Philadelphia, 1953.

Antibiotics as Deodorants.—A county infirmary reports the routine use of solutions of penicillin in patients with carcinomas that open to the surface of the body. Odors, which are usually of bacterial origin, were notably decreased.—*J.A.M.A.*, May 7, 1955.

Improved Agents for Rabies Control

The modified live virus vaccine (Flury strain) produced in chicken embryos is reported by the Communicable Disease Center at Atlanta, Ga., to be significantly superior to the older type of inactivated virus nerve tissue vaccine. Animals challenged three years after vaccination were found to be immune and field experience has corroborated these controlled tests. Pups can be immunized as early as 3 months of age but it is recommended that, when vaccinated at less than 6 months, they be re-vaccinated at 1 year of age, followed by a booster vaccination three to four years later.

The postvaccinal complications experienced by some persons, following a series of rabies vaccine treatments, are believed to be isoallergic phenomena related not to the rabies antigen but to some encephalitogenic components of the nerve tissue in the vaccine. This danger can be reduced and quicker protection produced by the use of anti-rabies serum given at the rate of 0.5 ml. per kilogram of body weight within 72 hours of the bite or sooner, followed by a reduced course of the vaccine. Research is proceeding toward a vaccine which will eliminate postvaccinal complications.—*Pub. Health Rep.*, May, 1955.

Lead Poisoning in Cattle

Lead poisoning was diagnosed as the cause of death of 1 or more cattle in three herds in Georgia. In one herd, 5 calves showed salivation, grinding of the teeth, convulsions, incoordination, constipation, and 2 of the 5 calves were partially blind and showed pronounced twitching of the muscles at the tailhead, base of the ears, and the mouth. The calves had been licking and chewing on an old red barn. Tissue analysis of 1 animal in each herd revealed 34.0, 19.9, and 121.7 *gammas* of lead per gram of kidney and 230.0, 8.5, and 21.5 *gammas* of lead per gram of liver, respectively. The brain of 1 animal, suspected of having rabies, contained 2.6 *gammas* of lead per gram of the brain tissue. Mouse inoculations were negative to rabies.—*Georgia Vet.*, March, 1955.

A New Approach to Bovine Bloat Therapy

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Observations and experiences may lead one along related, yet seemingly strange, chains of events. For instance, in parturient paresis the skin-reflex syndrome is reduced in varying amounts in different cases. If a cow is pricked with a needle, beginning at the tailhead and progressing anteriorly, her sensitivity is much less than normal but, if the cow is on her feet, there is frequently a marked increase of feeling anterior to the last rib. Calcium therapy given intravenously, using a commercial calcium, magnesium, and phosphorus compound solution, generally is followed by prompt recovery, both of the cow and her sensitivity, with the cows often eructating gases which have accumulated in their rumens.

Cows with vaginal, uterine, and rectal prolapses have a similarly reduced skin-reflex syndrome together with abdominal tenesmus. Again, calcium compound therapy has been beneficial for such cases,¹ with the skin-reflex syndrome improving with recovery. This raises the question as to the scope of the calcium compound in these recoveries.

In cases of bovine bloat, a similar reduced skin-reflex syndrome has been observed but to a lesser degree than in the above conditions.

Could it be that bloat is due, in part, to a malfunction of the neuromuscular function which governs—in its complexities—the eructation of the rumen gases? If so, calcium compound therapy might be beneficial.

This is a report on the results of such experimental therapy.

CASE REPORTS

Case 1.—A 600-lb. Shorthorn heifer, in the feedlot on corncobs meal and hay, was badly bloated late at night. She was sweating, agitated, and barely able to stand, showing an impediment in the action of her right foreleg. After a trocar was inserted

into her rumen and while the gas was escaping, the reflexes over her back were checked and were found to be least at the sacral area, improving markedly (yet still subnormal) anterior to the last ribs. She was then given 125 ml. of the calcium compound solution intravenously. She then became less nervous, her leg action became normal, and the eructation of gases commenced, even though the trocar was still in her rumen. She made a complete recovery.

Case 2.—A 1,200-lb. Red Poll bull which was somewhat bloated was given about 100 ml. of this calcium solution intravenously. After 60 ml. had been administered, he began eructating gases and soon was completely recovered.

Case 3.—A Shorthorn cow, which had calved two weeks previously, was found with her rumen greatly distended and reflexes subdued. The owner wished to avoid "sticking her" so she was given 200 ml. of the calcium solution. After about 100 ml. had been given intravenously, she began eructating gas and her rumen returned to normal size. Recovery was complete.

Case 4.—A 1,100-lb. Hereford steer, which had been fed corncobs meal, oats, concentrate, hay, and minerals, was tightly bloated but in no immediate danger of going down. The skin reflexes were checked from the tailhead anteriorly. They were markedly lessened but with some response anterior to the last pair of ribs. Over a period of about forty minutes, 450 ml. of the calcium solution was administered intravenously. When 200 ml. had been given, the eructation of gas began and the skin reflexes improved. Other indications of improvement were stretching, urination, and standing in a more normal manner. One hour after commencing treatment, the abdomen had returned to normal size and activity. Recovery was complete without other treatment.

The hypothesis of neural syndrome relationship between parturient paresis, tenesmus with prolapse, and bloat would seem to have been sustained by 4 cases of bloat with similar sensitivity changes which recovered after similar treatment. However, no conclusions can be drawn from so few cases since many such recover spontaneously.

Dr. Rydell is a general practitioner in Wheaton, Minn.
Rydell, R. O.: New Treatment for Bovine Rectal, Vaginal, and Uterine Prolapses. J.A.V.M.A., 129, (1954): 226-227.

Effect on Milk of Feeding Aureomycin

When aureomycin,® equivalent to 390 mg. per cow, was fed daily, there was no significant difference in the bacterial count of the milk nor in the amount of acid that developed with the cheese starter. The milk was successfully used to make cheddar cheese.—*J. Dai. Sci., Jan., 1955.*

Control Worms by Rotating Pastures

When sheep and lambs were grazed on a weekly pasture rotation at the University of Illinois, their increased gain was due partly to lower parasite infestation but more, perhaps, to the improvement in the pasture itself. The control animals on the undivided plot required extra feed by mid-June whereas those rotated on six plots had ample roughage. It bears out the old English axiom, "Don't let your sheep hear the church bells twice on the same pasture."—*Farm J., May, 1955.*

Effect of Forage Extracts on Bloat

At the University of Illinois, samples of rumen contents from cattle dying from acute bloat, and extracts from forages causing bloat, were found to inhibit the motility of segments of isolated rabbit intestine. Freezing, heating, or storing the sample did not alter this property. An extract of Ladino clover inhibited the eructation in a fistulated cow.—*J. Anim. Sci., May, 1955.*

Therapy for Turkey Hexamitiasis.—*Hexamita meleagridis*, a pathogenic protozoa which causes a serious enteritis of turkeys in America, is assuming importance in Britain. Poulets are most susceptible from 1 to 3 months of age. Therapy has been disappointing but 2-amino-5-nitrothiazole (enheptin) has been partially successful and di-n-butyltin dilaurate (tinostat) has been fairly successful.—*Vet. Rec., March 26, 1955.*



Sheep scabies during the 1953-1954 fiscal year was reported in 21 states. About 400 flocks including 40,000 sheep were affected. However, as of May 10, 1955, only 13 counties in Mississippi and four parishes in Louisiana (not included in the above map) were still under federal quarantine. A program aimed at eradicating the disease is being developed. The Animal Disease and Parasite Research Branch, ARS, U.S.D.A., will offer a short course at its Albuquerque, N. M., station for state employees assigned to scabies work.

NUTRITION

Riboflavin and the Health of Farm Animals

R. C. KLUSSENDORF, D.V.M.

Terre Haute, Indiana

Riboflavin is an important member of the group of about 40 nutrients known to be required for optimum growth and production of farm animals. Its biological importance has been recognized for twenty years, and we know that it is phosphory-



—New York State College of Agriculture

Fig. 1—Curled-toe paralysis, characteristic of riboflavin deficiency in chicks.

lated in the intestine and then is used to build a number of flavoprotein enzymes. Riboflavin is found in every living cell of all higher forms of life, where it plays an essential role in cell respiration and metabolism through its activity in several enzyme systems. Among the functions which it performs or promotes are: regulation of cell oxidation, absorption and metabolism of glucose and other carbohydrates, metabolism of fats, and utilization of amino acids. All of these functions are essential to growth, well-being, and reproduction. Its importance in insuring the availability and absorption of the fats from the intestines has recently been rediscovered and publicized by Russian research workers.

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Activity in the Body.—Riboflavin deficiency may affect a wide variety of physiological processes. A decreased rate of growth is one of the common signs of deficiency but it is not always observable when intake of riboflavin is reduced. This probably can be traced primarily to a reduced efficiency of feed utilization or feed conversion which may be coupled with impairment of erythrocyte formation.

Feed utilization is a measure of the value of a ration as expressed by the response of the animal in terms of growth, physical well-being, and productivity. It is a term used to designate the number of pounds of feed required to produce a pound of meat, or a dozen eggs, or a gallon of milk, or some similar unit of production. This evaluation is in contrast to the chemical analysis in terms of protein, carbohydrate, and fat. The designation "digestible" before each of these nutrients indicates the reason for the difference between the estimate of the chemist and the results actually achieved in the animal. Variable results have been recorded, even on that basis, so that the value of a ration is judged today on the results achieved when expressed in terms of production, which is the primary object in raising livestock.

One important factor in determining the efficiency of digestion and metabolism is the condition of the digestive tract. In chicks, deficiency of riboflavin has been recognized as a determining factor in the incidence and severity of diarrhea and related intestinal disturbances.¹ Colitis and degenerative changes resulting from this deficiency have been recorded, and these interfere with normal absorption while also hastening passage through the gut. While this double interference with the use of nutrients has not been definitely shown in all species of animals, it is a logical assumption and provides a basis for the observed effect—slower growth.

In rats, a considerable decrease in resistance to infectious diseases² is reported when riboflavin is present only in marginal or submarginal amounts. Here again, correlation has not been demonstrated in all species, but the reduced rate of growth

may be related to light or subclinical infections with pathogenic bacteria.

Deficiency.—Rations known to be particularly low in riboflavin can be compounded and fed to various species of animals. When this is done, the following conditions are observed:

Horses are much more prone to develop periodic ophthalmia or moon blindness, a condition characterized by vascularization keratitis and iridocyclitis. Riboflavin deficiency is probably not the only factor causing the condition,³ but prompt and complete control of the condition has resulted when the only recognized change was to add riboflavin to the ration at the rate of 40 mg. per day per 1,000 lb. of body weight. Established cases were not arrested by this supplemented ration, but new cases were apparently prevented by it.⁴ Hence, it is postulated that riboflavin may exert a protective influence on the ocular tissues or that it may serve as a "sparing agent" for other unrecognized factors.

Pigs on rations deficient in riboflavin fail to maintain normal growth or physical well-being. In advanced cases, the joints stiffen and frequent vomiting and severe diarrhea are observed. Skin eruptions and exudates appear over the back and sides. Here, too, eye involvement is shown by lens opacities, corneal vascularization, and cataracts. Sows on deficient rations farrow pigs that are dead or so weak that they do not live.

Chicks on riboflavin-deficient rations develop a characteristic lameness which is spoken of as curled-toe paralysis (fig. 1) and in which the birds walk on their hocks. It is essentially a neuromalacia. In the laying flock, both egg production and hatchability are poor. Poult's develop a dermatitis when riboflavin is withheld. Also, the vent becomes encrusted and inflamed.

Dogs deprived of riboflavin develop a demyelination of the dorsal columns of the spinal cord and the peripheral nerves. The hair becomes ragged and uneven, while the lips may be red and puffy or swollen.

Ruminants synthesize adequate amounts of riboflavin for normal function when they are fed practical rations, but young calves do not grow at the usual rate on starter feeds low in riboflavin.

Riboflavin is supplied in generous amounts in milk, good quality alfalfa hay, and green leafy forage. For addition to a

complete ration, riboflavin is usually supplied in fermentation solubles, whey, or yeast. The vitamin is quickly destroyed by light and by alkaline mediums, and is rapidly eliminated during periods of thiamine deficiency.

References

- Maynard, L. A.: *Animal Nutrition*. McGraw and Hill, New York, N. Y., 1907.
- Rosenberg, H. R.: *Chemistry and Physiology of the Vitamins*. Interscience Publishers, New York, N. Y., 1945.
- Pearson, P. B., Sheybani, M. K., and Schmidt, H.: *Riboflavin in the Nutrition of the Horse*. *Arch. Biochem.*, 3, (1944): 467.
- Jones, T. C., Roby, T. D., and Maurer, F. D.: *The Relation of Riboflavin to Equine Periodic Ophthalmia*. *Am. J. Vet. Res.*, 7, (Oct., 1946): 403.

Vitamin Ingredient Found in Thymus.—The mystery of the function of the thymus gland may be solved and its hormone isolated as a result of discovering, in the gland, an "intensely" yellow chemical containing an ingredient of vitamins. Like a related chemical in citrus fruit, its function may be to keep capillaries healthy.—*Sci. News Letter*, Feb. 26, 1955.

Sources of Vitamin B₁₂

Unlike other vitamins or their precursors, vitamin B₁₂ is not present in significant amounts in higher green plants. Such plants as well as animal tissues lack the ability to synthesize B₁₂. Its sole sources in nature are bacteria, a few fungi, and perhaps certain other microorganisms. As yet, it has not been produced synthetically.—*Nutr. Rev.*, April, 1955.

Citrus Pulp Substituted for Silage.—In areas where citrus pulp is available, dairymen are feeding it soaked, dry, or mixed with molasses as a substitute for silage.—*Farm J.*, March, 1955.

Effect of Feed on Swine Leanness.—Feeding pigs at protein levels of 10 to 20 per cent of the ration resulted in significantly greater proportions of "lean" as the level of protein increased. The inclusion of antibiotics apparently had no important effect on the carcass quality.—*J. Anim. Sci.*, Feb., 1955.

EDITORIAL

The Salk Vaccine

News of a medical nature is seldom world shaking, yet said *Time Magazine* on April 25: "Never before in history had a medical development been big, instantaneous news over a large part of the world." This was nearly two weeks after the dramatic announcement that "the vaccine works." The "vaccine" was the Salk, formalin-inactivated poliomyelitis virus vaccine. The announcement, the highlight of an exhaustive report on the 1954 use of this vaccine on about 440,000 children, was made at a highly spotlighted conference following a suspense build-up quite unprecedented in scientific circles.

With the poliomyelitis season approaching, there was reason for urgency and the big "kickoff" was probably the easiest and quickest method of getting the vaccination program underway. However, because of what has happened since, the big send-off has become the source of considerable embarrassment. Said the *Wall Street Journal* on May 10: "The trouble now is that the . . . publicity led the public to believe that it [the vaccine] was . . . nearly perfect and that, being so, there was no need to proceed with prudence." This statement resembles those made in 1951 after the modified hog cholera vaccines had been launched with much publicity.

The nationwide "polio" vaccination program was started on April 16 but, by April 27, six vaccinated children had developed the disease and one producer's vaccine had been withdrawn. On May 6, all deliveries of the vaccine were temporarily stopped. In commenting critically on "this state of affairs" the *Wall Street Journal* stated that "the responsibility is pretty evenly distributed among: [a] the polio foundation itself; [b] the press; and [c] the political authorities." The producers of the vaccine were not criticized. The vaccinating program has been resumed but it can not hope to be as extensive as originally planned.

A second look at the original April 12 report revealed that in 1954 the Salk vaccine had been "safe" but apparently only 60 to 70 per cent effective in one test group,

80 to 90 per cent effective in the other. The most favorable feature was that it seemed most effective against the more severe types of the disease.

A vaccine for poliomyelitis, even if only 60 per cent protective, was a marked advance. Said *Science News Letter* on April 23, "The 80 to 90 per cent efficiency rating . . . makes it about as good as a vaccine can be" because "some persons . . . can not make antibodies to fight invading disease germs or viruses."

This estimate may be correct for vaccines used on man but it would be difficult to convince most veterinarians who had long used the simultaneous virulent virus and serum vaccination against hog cholera that their efforts had left 10 to 20 per cent of the animals susceptible. As relatively ineffective as most bacterins are, the one for blackleg would seem to have a better record than that.

SUPERVISION OF PRODUCTION

Several other features associated with the poliomyelitis vaccine and with the vaccinating program are of interest to veterinarians. Those familiar with the U.S.D.A. requirement that an inspector be constantly present to meticulously supervise every detail in the production of hog cholera virulent virus and anti-hog cholera serum may be surprised to learn that the Public Health Service does not require such supervision during the production of any biological products used on man. They provide no on-the-job inspectors. Instead, the producer of such products presents a "protocol" which reports in detail the methods used in making and testing the product and the results of the tests. Representative samples of the product are then taken at random for testing by the P.H.S. If the protocol is approved and if the tests are satisfactory, that serial of the product is released.

Another point of interest is the similarity of certain phases in the development of the Salk vaccine with those in the development of a vaccine for another neu-

rosis, equine encephalomyelitis. Two types of virus are involved in the equine disease, three in the human disease, and none of these viruses are cross-immunizing. Early vaccines for both diseases were crude and soon abandoned although for different reasons.

In 1935, two poliomyelitis vaccines were tried. The killed virus vaccine was ineffective, the modified live virus vaccine was not safe. It allegedly caused the death of six children. The source of the virus in these vaccines was the spinal cord of infected monkeys. The source of the virus for the first equine encephalomyelitis vaccine was the brains of artificially infected horses. This vaccine, which was made by inactivating the virus in the brain tissue with formalin, was extensively used in 1938, the second year of the tragic 1937-1938 epizootic in which over 354,000 cases of the disease were reported.

The effectiveness of the brain tissue vaccine was subject to question but its "safety" was probably greater for the vaccinee than for the vaccinator or the handler of the animal. To avoid necrosis, the bulky, irritating vaccine had to be given in three separate intramuscular injections. This process was then repeated in about two weeks, a procedure which seemed to generate the fighting tendencies of all but the most docile creatures. Fortunately for all concerned, a chicken embryo vaccine, the first vaccine of its type to be distributed commercially for veterinary use, became available in the fall of 1938 so the brain tissue product vanished.

The chick vaccine seems to be both safe and effective. The virus of fowlpox had been propagated in embryonating chicken eggs in 1931 and infectious laryngotracheitis a few years later but vaccines for these diseases were not produced commercially until in the 1940's.

There already is speculation concerning the development of better poliomyelitis vaccines but those who optimistically predict that the disease is "doomed" should recall the oft-repeated observation that no disease has ever been eradicated by vaccination alone.

Apparently, veterinary science is already profiting from certain steps perfected during the development of the Salk vaccine. From Plum Island comes word that the virus of vesicular stomatitis is now being propagated on a kidney cell-containing

medium. However, the kidney cells used are from guinea pigs rather than from monkeys, as in the Salk method. This may not lead directly to the production of a vaccine for vesicular stomatitis, and the Salk vaccine may never be fully satisfactory but both are decidedly progressive steps. Science learns from its failures as well as from its successes.

The Rabbit Threat in San Juan County

A burrowing rabbit which had to be exterminated on one island because it was undermining the buildings, and which is multiplying alarmingly on the other islands that make up San Juan County, Washington, is being brought into many states for hunting purposes. Sportsmen, especially beagle clubs in northeastern states, are importing them at the rate of 10,000 a year. It is said to be the same rabbit which defied control in Australia until the government planted myxomatosis infection in the species. The animal is twice as big as a cottontail, has longer ears and legs, and is more prolific. It is a very costly pest.—*Farm J., May, 1955.*

The Meat Quality of Swine Breeds

A two-year test at Iowa State College indicates that American breeds of hogs are too fat, that meat-type hogs sacrifice nothing in growth rate or feed efficiency, and that crossbred swine are more vigorous.

A comparison of seven breeds showed that the crossbred offspring of the long-bodied Landrace, Yorkshire, and Tamworth hogs had the greatest value per pound while the Duroc and Hampshire crossbreds had the least value per pound. Landrace crossbreds had the best growth rate and best carcasses. Yorkshire sows farrowed and raised considerably larger litters, with little difference in the other six breeds. All crossbred litters were stronger, had fewer deaths, and invariably outgrew the purebred litters.—*Farm J., May, 1955.*

Control of Swine Fever in Germany.—It is recommended that swine fever (hog cholera) in Germany be controlled by the stamping-out method alone. The need for preventing the introduction of virus via pigs or meat products from countries where the disease exists is emphasized.—*Vet. Bull., March, 1955.*

CURRENT LITERATURE

ABSTRACTS

Telangiectasis of the Bovine Liver Parts II, III, and IV

Pretelangiectasis was found to develop from the accumulation of glycogen between the hepatic cell and endothelium. The normal flow of blood into pretelangiectatic parenchyma caused the erosion of hepatic cells to form blood spaces. Microorganisms were not isolated from pretelangiectatic or telangiectatic lesions.

The injection of various substances into rabbits via the portal vein gave some evidence that hydrogen sulfide might excite pretelangiectasis. The quantity and not the mere presence of this substance in the digestive tract could be related to telangiectasis.

Parenchymal erosion, in opposition to hepatic necrosis, forms enlarged blood spaces resulting in a lesion with a static flow of blood and anoxia. The lesion may remain as such in the absence of secondary invasion, or it may heal by mesenchymal or hepatic cell proliferation.—[A. C. Andersen: *The Pathogenesis of Telangiectasis in the Bovine Liver. II. Histopathological and Microbiological Studies. Am. J. Vet. Res., 16, (April, 1955): 217-236; III. Experimental Telangiectasis. Am. J. Vet. Res., 16, (April, 1955): 237-239; IV. Discussion and Summary. Am. J. Vet. Res., 16, (April, 1955): 240-245.*]

FOREIGN ABSTRACTS

Leptospirosis in Tunisia

The most serious infections in Tunisia are foot-and-mouth disease, theileriasis, and leptospirosis. In many establishments, up to 98 per cent of the cattle show titers of 1:10,000 or more. Formolized culture vaccines (5 cc.) seem to have reduced the incidence of infection.—[G. Jayot: *Aspect économique de la leptospirose du bétail en Tunisie. Bull. Off. internat. Epizoot., 43, (1955): 166.*—J.P.S.]

Leptospirosis of Animals in Italy

The incidence of leptospirosis of cattle, horses, swine, and sheep has no definite character. This disease has not yet become a problem of serious economic importance. The region of the Po in northern Italy is the most seriously affected. Nine species of *Leptospira* have been demonstrated in animals.

In swine, *Leptospira pomona* is found most commonly but *Leptospira icterohaemorrhagiae*, *Leptospira australis*, *Leptospira byos*, and *Leptospira bataviae* have also been found. In horses, *L.*

icterohaemorrhagiae and *L. pomona* have been isolated in animals with periodic ophthalmia and in some with icterohepatitis. In slaughtered cattle, 5 per cent showed reactions to either *L. pomona* or *L. icterohaemorrhagiae*. Some severe infections in cattle have been due to *L. icterohaemorrhagiae*.—[J. Caporale: *Les Leptospirose de bœuf, en Italie. Bull. Off. internat. Epizoot., 43, (1955): 159.*—J.P.S.]

Cultivation of Hog Cholera Virus in Spleen Tissue Medium

Minced swine spleen tissue in modified Tyrode's solution has been used for the cultivation of hog cholera virus. The titers obtained from the seventy-sixth passage were 10^8 , from the eighty-third passage, 10^9 . Serial passage in tissue culture showed titers comparable to those found in diseased animals.

The method of producing hog cholera virus in spleen tissue permits the production of large amounts of active hog cholera virus.—[S. Frenkel, J. G. Van Bekkum, and H. S. Frenkel: *Cultivation of Hog Cholera Virus in Spleen Tissue Fluid Medium. Bull. Off. internat. Epizoot., 43, (1955): 327.*—J.P.S.]

BOOKS AND REPORTS

Report of the Tokyo Government Experiment Station for Animal Hygiene

This report includes five papers on ovarian cysts in cows: (1) hormonal treatment; (2) endocrinological and histological studies on the correlation between the ovarian cyst and symptoms in the cow; (3) artificial induction of the ovarian cyst; (4) endocrinological studies on the cause of ovarian cysts; and (5) hormonal treatment of ovarian dysfunction.

The papers are supplemented by charts, tables, and photomicrographs. Extraction and determination of estrogens excreted in the urine were performed on 3 nymphomaniac and 2 anestrous cows. Considerable amounts of estrogens were found in the urine before treatment, while after treatment the urine was negative, as it was in the normal cows in estrus which were employed as controls.

It was concluded that the injection of 10,000 units of human chorionic gonadotrophin was useful in the treatment of ovarian follicle cysts in the cow.

In a study of estrogen content of liquid from follicular cysts in cows with nymphomania, a large amount of estrogen was found at least in one of

the cysts, although during anestrus the determinations in all follicular cysts were negative. The estrogen content of the liquid corresponds to the antemortem symptom of the cow. There was no relationship between estrogen content and the size of the cyst. Histological findings are reported.

Remarkable estrous signs resulted from successive injections of stilbestrol. In these animals, ovarian follicles became atretic within a few days after the injections started and normal ovarian cycles were entirely arrested; thus anestrous conditions were continued. In 1 of 3 cows, signs of estrus did not appear following the injections but all 3 became nymphomaniac and developed ovarian follicular cysts. It was believed that ovarian follicular cysts and nymphomania were caused by abnormality of the anterior pituitary function which was influenced by large amounts of estrogen injected successively. Endocrinological studies on the cause of ovarian cysts were performed by quantitative determination of serum and pituitary gonadotrophin in cows with cystic ovaries.

When histological observations were made on the pituitary bodies from cows with cystic ovaries, it was concluded that the ovarian cysts were caused directly by the abnormality in their endocrine function, especially by hyperfunction on the side of the follicle-stimulating hormone secretion.

Sixteen anestrous cows diagnosed as having ovarian dysfunction were benefited when given an oil solution of human chorionic gonadotrophin by single or double intramuscular injections of 2,000 units.—[*Experimental Report No. 28 of the Government Experimental Station for Animal Hygiene, Tokyo, Japan. By Makoto Yamauchi, Kiyomi Ashida, and Sumio Inui. Tokyo, Japan. 1954.*—H. E. KINGMAN, SR.

A Free Library of Books on Horses

The magazine mart in Plant City, Fla., advises that it has a list of 800 different books on horses which are available for the asking. The list includes every horse book in print in America plus many from England, Scotland, Ireland, and Australia. It includes books of fact and fiction but no strictly technical books. A catalog may be obtained by writing Ken Kimball, Plant City, Fla.

Diseases Transmitted from Animals to Man

The fourth edition of this book has been improved considerably by grouping related subjects and adding seven new chapters. Twenty-four authors have contributed to this excellent reference and textbook. It contains the latest available information on the zoonoses, including their etiology, pathology, incidence, control, and transmissibility. The material is presented in a manner that is easy and interesting to read, yet detailed.

The text is well illustrated with graphs, charts, and photographs. The photographs of gross and

microscopic pathology are excellent, but the photographs showing clinical symptoms could be enhanced.

The book is well printed on a good grade of paper. Numerous references are listed by each contributing author.

This excellent book should be a "must" for veterinary students, veterinarians, physicians, and public health officials.—[*Diseases Transmitted from Animals to Man. By Thomas G. Hull. 696 pages. 4th ed. Illustrated. Charles C. Thomas, Springfield, Ill. 1955. Price \$12.50.*—W. E. JENNINGS and A. L. HOGGE, JR.

Leptospirosis

Leptospiroses are becoming an increasingly important item of veterinary and medical interest. Professor Mario Austoni, teacher of infectious diseases at the Medical School of Padua, Italy, has condensed in this book, written in Italian, the ancient and modern views on Leptospira organisms, and a large amount of personal knowledge matured in an area where this type of disease is prevalent.

The book is divided into seven parts, dealing with history, taxonomy, diagnostic techniques, epidemiology, pathology, clinical, human, and animal diseases. The seventh part, animal leptospiroses, considers the condition in dogs, swine, cattle, horses, sheep, foxes, and other animals.

The book contains 94 figures and a complete bibliography of 140 pages.

This book will be of interest to those wishing a complete review of the facts concerning this group of diseases.—[*Le Leptospirosi. By Mario Austoni. 716 pages, 94 figures. Tipografia del Seminario, Padova, Italy. 1953. Price not given.*—A. MANTOVANI.

Index of Treatment in Small Animal Practice

Each edition of this British text more nearly approaches the techniques and equipment, such as instruments, orthopedic splints, and operating tables, used in America.

The latest methods for prophylaxis and treatment of distemper, hepatitis, and rabies are adequately discussed.

A list of proprietary preparations with names and addresses of manufacturers has been added. These are largely companies unknown to American practitioners and, therefore, are of little value.

This book is an added source of information on small animal diseases and surgery.—[*Index of Treatment in Small Animal Practice. By Hamilton Kirk. 3rd ed. 888 pages. Illustrated. Williams and Wilkins, Baltimore, Md. 1954. Price not given.*—WAYNE H. RISER.

THE NEWS

Dr. B. T. Simms Named Director, Livestock Research, Agricultural Research Service, U.S.D.A.

Dr. Bennett T. Simms, former chief of the Bureau of Animal Industry, has been named to succeed Dr. O. E. Reed as director of livestock research for the Agricultural Re-



Dr. B. T. Simms

search Service, U.S.D.A., effective Sept. 1, 1955.

Dr. Simms has served as chief of the Animal Disease and Parasite Research Branch, ARS, since the reorganization of the Agricultural Research Administration in 1954.

As chief of the Bureau of Animal Industry from 1945 to 1954, Dr. Simms was the leader of U.S. efforts, in cooperation with the government of Mexico, in successfully eradicating a serious outbreak of foot-and-mouth disease, preventing its spread to the United States. The new Animal Disease Research Laboratory on Plum Island, N.Y., for study of virus diseases of livestock, was planned under his direction. This is the only laboratory in the United States

equipped for research on virus diseases of livestock.

Born at Emelle, Ala., Jan. 25, 1888, Dr. Simms received his early education in local schools and then attended Alabama Polytechnic Institute where he was a student in animal husbandry for two and a half years and from which he received his veterinary degree in 1911. After graduating, Dr. Simms was instructor in physiology at North Carolina State College for two years. He took graduate work in pathology and microbiology at the University of Chicago and Rush Medical College, preparatory to his twenty-five years at Oregon State Agricultural College where he organized, and later headed, the Department of Veterinary Medicine. At that time, he was engaged in original research of local and national importance, now indelibly etched into the world's scientific literature. His published investigations have covered a broad range of subjects including bovine brucellosis, salmon poisoning in dogs, liver flukes in sheep, phenothiazine as an anthelmintic, goiter in foals, parasites of fish, Johne's disease, and lathyrus poisoning in cattle. His more recent works on coccidiosis of calves and parasites of cattle are noteworthy contributions to livestock sanitary science.

Dr. Simms is a past-president of the American Veterinary Medical Association (1946-1947), a member of the Washington Academy of Sciences, a fellow of the American Association for the Advancement of Science, a member of the Agricultural Board of the National Research Council, Sigma Xi, Gamma Sigma Delta, Alpha Zeta, and Beta Theta Pi.

Executive Board Nominations in Districts V and VII

As the result of primary balloting in Executive Board District V (Iowa and Minnesota), the following candidates have been nominated:

- Dr. F. E. Brutsman, Traer, Iowa.
- Dr. R. Fenstermacher, St. Paul, Minn.
- Dr. C. D. Lee, Ames, Iowa.
- Dr. I. A. Merchant, Ames, Iowa.
- Dr. B. S. Pomeroy, St. Paul, Minn.
- Dr. C. F. Schlotthauer, Rochester, Minn.
- Dr. John D. Shoeman, Atlantic, Iowa.
- Dr. H. C. Smith, Sioux City, Iowa.
- Dr. F. B. Young, Waukeee, Iowa.

Because of multiple tie votes for three places, it was necessary to list nine nominees on the final ballot instead of the usual five.

In District VII (Alaska, Hawaii, Idaho, Montana, Nebraska, North Dakota, Oregon, Wash-

ington, Philippine Islands, South Dakota, and Wyoming), the nominees are:

Dr. C. A. Bjork, Portland, Ore.
Dr. G. H. Good, Cheyenne, Wyo.
Dr. P. G. MacKintosh, Yakima, Wash.
Dr. E. C. Stone, Pullman, Wash.
Dr. E. E. Wegner, Seattle, Wash.

Drs. J. K. Bone and H. W. Boothe of Chicago served as tellers on June 3 to count the nominating ballots and certified the results as given above.

Ballots listing the nominees in the two districts were mailed to members in those districts on June 13. The polls will close on July 12, and the candidates elected will take office for five-year terms at the conclusion of the annual meeting in Minneapolis.

Openings for Veterinary Meat Inspectors in Hawaii

The Department of Civil Service, Territory of Hawaii, has announced recruitment for two positions, one as supervising meat inspector, grade GS-11 at a salary of from \$450.60 to \$533.33 monthly; the other as veterinary meat inspector, grade GS-10 at a salary of \$416.67 to \$479.17 monthly. Applicants for the former must be U. S. citizens, graduates of a recognized veterinary school, eligible for license to practice in Hawaii, and with at least three years of experience in practice or in meat-inspection work. Applicants for the latter must have similar qualifications but only two years of practice or meat-inspection experience are required.

Further information can be obtained from Mr. Elwood Van Gieson, Deputy Personnel Director, Territory of Hawaii, 825 Mililani, Honolulu.

Laboratory Refresher Courses

The Department of Health, Education, and Welfare announced a series of laboratory refresher training courses to be conducted at the Laboratory Branch of the Communicable Disease Center, Chamblee, Ga., during the coming year. The duration of the courses varies from one to four weeks and the subjects include laboratory diagnosis of bacterial, parasitic, viral, and rickettsial diseases. The first of the scheduled courses starts on Sept. 12, 1955, the last on March 26, 1956. A total of 19 courses is offered. For further information address inquiry to P. O. Box 185, Chamblee, Ga.

Hydatidology Congress

The Sixth Congress of the International Association of Hydatidology will be held in Athens, Greece, Sept. 14-18, 1956. Persons interested in further information about the Con-

gress and its program should communicate with Prof. B. Kourias, I, MacKenzie King St., Athens, Greece, general secretary of the Congress. The deadline for submitting titles for papers to be presented to the Congress is December, 1955.

STUDENT CHAPTER ACTIVITIES

For copy deadline, see "Among the States and Provinces"

Illinois Chapter.—The University of Illinois Student Chapter of the AVMA held five regular business meetings during the spring session. The speakers were Drs. Roger A. Grant, Bradford; Robert Shideler, Danville; Gail Hawley, Terre Haute, Ind.; and D. W. Pratt, Gifford.

Social functions included two annual events: a spring picnic and the spring banquet honoring the graduating seniors.

Electation of officers for the fall semester of 1955 was held at the regular May 19 business meeting. Those elected were: David McConnell, president-elect; Phillip Hobson, vice-president; John Gerdes, treasurer; Joan Owens, secretary. Marlin Kleckner, last semester's president-elect, became president.

S/VINCENT W. CHAFFEE, Secretary.

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Kansas Chapter.—At the annual dinner dance of the Kansas State College Student Chapter of the AVMA on April 30, the following seniors were honored: Hiram H. Faubion, the AVMA Auxiliary award of \$25 for outstanding leadership; Ridge Scott (\$15) and Richard E. Hudson (\$10), the Kansas Veterinary Medical Association's certificate for general proficiency; Rollin W. Vickery and Raymond O. Cooper, gold medals and certificates for the outstanding seniors in veterinary ROTC.

Dean E. E. Leasure distributed the certificates, signed by the veterinary faculty members, attesting to membership in the Chapter, and administered the veterinarian's oath to the seniors. Gerry Day, newly elected president of Kansas State College student body, was toastmaster of the dinner. A dance followed the recognition program.

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Minnesota Chapter.—The last regularly scheduled meeting of the year for the University of Minnesota Student Chapter of the AVMA was held May 4. Dr. Bruce Hohn, Rochester, an alumnus, gave an enlightening talk on business legalities and insurance in veterinary practice. The following men assumed their offices for the coming year: Charles Kucirek, president; Stanley Diesch, vice-president; Lawrence Davis, president-elect; Douglas Swacina, secretary; Orville Hanson, treasurer; and Warren Nystrom, sergeant-at-

(Continued on page 85)



News From Washington



On June 9 and 10, the Senate Armed Services Committee held hearings on HR-3005, the regular draft, and HR-6057, the doctor draft. The former has passed the House, while the latter, although reported favorably by the House Armed Services Committee, has not yet been considered in the House. The AVMA witness presented testimony to the Senate Committee concerning both bills.

Of special interest to the profession is S-1467, an amendment to HR-3005 (see JOURNAL, May, 1955:434). Important points in AVMA testimony relating to this amendment included: the **shortage of veterinarians** in the United States, which means many areas have inadequate veterinary service; the **regulatory veterinary services** of many states lack sufficient **veterinarians**, both full-time and part-time, to carry out necessary disease prevention and control programs; the **difficulty the U.S.D.A. has in obtaining veterinarians** to meet even their minimum requirements — the current shortage of 150 veterinarians under present budgeted positions in ARS was pointed out; the **Civil Defense responsibilities** delegated the Secretary of Agriculture in connection with atomic, biological, and chemical warfare activities, pointing out it was essential that a **reserve of veterinarians be trained and available to carry out an emergency program** for the eradication of foreign or unusual diseases; that enactment of S-1467 would be of greater benefit to the defense and security of the U.S. than if the small number of veterinarians affected were inducted under the regular draft and utilized in a nonprofessional capacity in one of the three departments of the Department of Defense.

Senator Milton R. Young (R., N. Dak.), author of S-1467, pointed out in a statement to the Committee why the amendment is necessary and its importance to the livestock industry and to the defense and security of this nation. Dr. W. L. Ben-

dix, state veterinarian of Virginia, presented a well-documented statement supporting the amendment. The American Farm Bureau Federation witness, in testifying on HR-3005, included a recommendation supporting S-1467. Major General L. B. Hershey, director, Selective Service System, in response to a question from the committee chairman, stated he had no objection to the amendment providing the veterinarians affected accepted a reserve commission (inactive status) concurrently with employment in the U.S.D.A.

AVMA testimony on the doctor draft and special pay was substantially the same as presented to the House Committee (see JOURNAL June, 1955:490).

Committee action on both bills is anticipated early in the week of June 13, following which, if favorably reported, they will go to the Senate. Due to a number of circumstances, it is impossible, as of June 11, to forecast the outcome with respect to either bill, including amendments.

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Following action by the Senate on the U.S.D.A. appropriation bill, it was passed and became Public Law 40 on May 23, 1955. This Act provides \$37,800,000 for all research in ARS; \$18,658,700 for plant and animal disease and pest control; \$14,325,000 for meat inspection, and \$1,900,000 for the research program at Plum Island. These figures are an increase for research and disease control of \$800,000 and \$908,700 over that provided in the House-passed bill (see JOURNAL, May, 1955:434).

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The director of personnel, Agricultural Research Service, U.S.D.A., advises that **an increase of \$625 per annum in the minimum pay for professional veterinary positions at grade GS 7 is effective after June 18, 1955. The new rate for GS 7 (entering grade) is \$4,830.**

(Continued from page 83)

arms. Dr. R. L. Kitchell was elected the incoming faculty advisor.

The annual spring banquet was held May 6 at the St. Paul House in Shakopee. The weekend of May 14 found us participating in the all-campus Kitchi Geshig open house. The buildings and equipment were open to the public and tours were conducted through the clinic.

Preparations are near completion for the AVMA convention to be held in Minneapolis in August. Students and student auxiliary delegates are cordially invited to write our chairman, Ray Swanson, at 2290 Brewster St., St. Paul, for any information pertaining to the convention.

s/Douglas Swacina, Secretary.

Missouri Chapter.—At the regular monthly meeting of the University of Missouri Student Chapter of the AVMA on May 9, the following officers were elected for the coming year: Robert Fuchs, president-elect; William Reid, vice-president; Garland Lindsey, secretary; Leonard Palmer, treasurer; and Dr. Cecil Elder, faculty advisor. At a previous meeting, Donald Blendon was elected to represent the Chapter at the AVMA convention in Minneapolis.

Members enjoyed the junior and senior banquet held the evening of May 21.

s/James Crockett, Retiring Secretary.

WOMEN'S AUXILIARY

Minneapolis Meeting.—Final plans have been made for the Thirty-Eighth Annual Meeting of the Women's Auxiliary, to be held in connection with the Ninety-Second Annual Meeting of the AVMA in Minneapolis, August 15-18.

The Curtis Hotel will be headquarters for Auxiliary meetings, but the annual luncheon will be held in the Radisson Hotel and will be followed by a program and a style show. Varied social activities and tours have been arranged for your enjoyment and a special program has been planned for the teenagers and sub-teenagers.

A complete program of women's and children's activities appears with other convention information in the convention section of this JOURNAL.

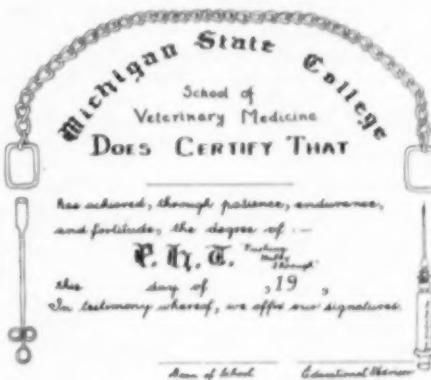
The Minnesota Auxiliary celebrates its twentieth birthday during the convention and in honor of the occasion the Minnesota State Veterinary Medical Society invites all of you to a coffee party, a true Minnesota custom, in the East Room of the Curtis Hotel at 8:30 a.m. on Wednesday, August 17. Many of our charter members will be there to greet you.

Classes for Members of Student Auxiliary.—The wives of the senior veterinary students at

the University of Georgia attended classes one evening each week for seven weeks to develop a better understanding of their husbands' profession. The classes were held at the School of Veterinary Medicine under the supervision of Dr. Thomas Zweigart, assistant professor in the Department of Pathology and Parasitology.

The course included office procedure, including bookkeeping and the role of receptionist; first aid; recognition of common parasites; how to use the microscope; and how to take blood counts and make urinalyses. Twenty-three women received diplomas "Dictator of Veterinary Men." They are grateful to those who gave of their time to teach these classes and wish that the classes could be installed as a permanent procedure for members of the Women's Auxiliary to the Georgia Student Chapter of the AVMA.

s/KATHRYN M. NASH, Program Chairman.



The above is a copy of the "P. H. T." certificate which is given to the student wives who regularly attend the meetings of the auxiliary to the student chapter of the AVMA at Michigan State University. About 30 young women qualified this year.

Kansas City Auxiliary.—On April 19, members of the Women's Auxiliary to the Kansas City Veterinary Medical Association heard Mrs. G. W. Beran, who spent four months in the Netherlands as an exchange student under the International Farm Youth Exchange Program, tell of her experiences. Hostesses for the evening were Mrs. Leroy Hansen and Mrs. Dean Weckman.

s/Mrs. R. S. MILLERETT, Program Chairman.

Michiana Auxiliary.—The Women's Auxiliary to the Michiana Veterinary Medical Association met at the Hotel LaSalle, South Bend, Ind., on May 12. The two life members of the Auxiliary, Mrs. W. T. Graham, Niles, Mich., and Mrs. A. S. Einoris, Palm Beach, Fla., were

present at this meeting. The program of the evening consisted of a talk and demonstration by a Helena Rubinstein beauty counselor.

S/MRS. L. D. RAMSAY, *Secretary.*

APPLICATIONS

Applicants—Members of Constituent Associations

In accordance with paragraph (b) of Section 2, Article X, of the Administrative Bylaws, as revised at the annual meeting of the House of Representatives, Aug. 18, 1951, in Milwaukee, Wis., the names of applicants residing within the jurisdictional limits of the constituent associations shall be published once in the JOURNAL.

The following applicants have been certified as members of the constituent association that has jurisdiction over the area in which the applicant resides. This certification was made by the secretary of the constituent association in accordance with Section 2, Article X, of the Administrative Bylaws.

BAKER, JACK C.
2617 S. 18th St., Homewood, Ala.
D.V.M., Alabama Polytechnic Institute, 1948.

CHILES, HARRY E.
1000 N. Dale St., St. Paul, Minn.
D.V.M., Kansas State College, 1944.

COTTONGIM, O. W.
2047 N. Tibbs Ave., Indianapolis, Ind.
D.V.M., Michigan State College, 1946.

FREDERICK, GEORGE L.
Chemistry Division, Science Service Bldg.,
Carling Ave., Ottawa, Ont.
D.V.M., Ontario Veterinary College, 1952.

FREVERT, M. F.
West Union, Iowa
D.V.M., Iowa State College, 1933.

GLASS, SHERMAN A.
112 E. Third St., Maysville, Ky.
D.V.M., Ohio State College, 1939.

KEITH, H. BROOKS
3356 G St., San Bernardino, Calif.
D.V.M., Iowa State College, 1935.

KOPP, MOE
23 Putnam Ave., Port Chester, N. Y.
D.V.M., New York State Veterinary College,
1940.

LANDIS, J. HAROLD
Smoketown, Pa.
V.M.D., University of Pennsylvania, 1953.

McCASLAND, FOY V.
1408 Third Ave., Mount Pleasant, Texas.
D.V.M., Texas A. & M. College, 1945.

MONTGOMERY, JOHN W.
1210 Dewey Ave., Poteau, Okla.
D.V.M., Tuskegee Institute, 1950.

RAMSEY, FRANK A.
Rocksprings Rd., Uvalde, Texas.
D.V.M., Texas A. & M. College, 1954.

SCHNEIDER, R. F.
Postville, Iowa.
D.V.M., Iowa State College, 1943.

SIMPSON, HUGH D.
Division of Veterinary Medicine, Iowa State
College, Ames, Iowa.

D.V.M., Ontario Veterinary College, 1950.

SMITH, JAMES A.

5709 Lyndale Ave., S., Minneapolis, Minn.

D.V.M., Alabama Polytechnic Institute, 1948.

WEBMAN, E. E.

416 N. Fountain, Wichita, Kan.

D.V.M., Kansas State College, 1945.

WILLIAMS, ROBERT C.

Main St., Dundalk, Ont.

D.V.M., Ontario Veterinary College, 1948.

WILSON, WELLS M.

Rt. 1, Circleville, Ohio.

D.V.M., Ohio State College, 1936.

Applicants — Not Members of Constituent Associations

In accordance with paragraph (b) of Section 2, Article X, of the Administrative Bylaws, as revised at the annual meeting of the House of Representatives, Aug. 18, 1951, in Milwaukee, Wis., notice of all applications from applicants residing outside of the jurisdictional limits of the constituent associations, and members of the Armed Forces, shall be published in the JOURNAL for two successive months. The first notice shall give the applicant's full name, school, and year of graduation, post office address, and the names of his endorsers.

First Listing

HUBER L., GUSTAVO

P. O. Box 297, Cali, Columbia, S. A.

M.V.D., National University of Columbia, S. A., 1954.

Vouchers: J. J. Bohorquez C., and J. A. Villamil M.

LEE, NAM SHIN

National Institute for the Veterinary Research,
No. 620 AmNam Dong, Pusan, Republic of
Korea.

D.V.M., Azabu Veterinary College, Japan,
1938.

Vouchers: J. A. Baker and G. C. Poppensiek.

SMITH, ALAN

P. O. Box 289, U. S. Marine Corps, Recruit
Depot, Parris Island, S. Car.

D.V.M., Ohio State University, 1944.

Vouchers: R. L. Hummer and L. J. Neurawter.

Second Listing

APOSTOLOU, ALEX, 1 American Square, Athens,
Greece.

FINEG, JERRY, 7330 U.S.A.F. Hospital, APO 208,
New York, N. Y.

CALHOUN, JOSEPH R., Box 265, Sherburn, Minn.

PAYNE, JESSE, JR., 1306 Marshall, Tupelo, Miss.

RIEDEL, GUENTHER, Avenida Brigadeiro Luiz
Antonio, 2862, São Paulo, Brazil.

Graduate Applicants

The following are graduates who have recently received their veterinary degree and who have applied for AVMA membership under the provision granted in the Administrative Bylaws to members in good standing of student chapters. Applications from this year's senior classes not received in time for listing this month will appear in later issues. An asterisk (*) after the name of a school indicates that all of this year's graduates have made application for membership.

First Listing**University of California**

HAYDON, KEITH L., D.V.M.

44720 Fig St., Lancaster, Calif.

Vouchers: B. V. Lundberg and J. A. Howarth.

HELD, JOE R., D.V.M.

290 S. Michigan Ave., Pasadena, Calif.

Vouchers: O. W. Schalm and N. L. McBride.

WETMORE, WILLIAM B., D.V.M.

Rt. 8, Box 794, Modesto, Calif.

Vouchers: J. W. Kendrick and J. F. Christensen.

University of Georgia*

ADAMS, ROBERT E., D.V.M.

R.F.D. 2, Stapleton, Ga.

Vouchers: J. D. Edens and D. Sikes.

ALLEN, JAMES R., JR., D.V.M.

Mars Hill, N. Car.

Vouchers: D. Sikes and A. M. Mills.

ALLEN, TONY M., D.V.M.

8507 Hazelwood Dr., Bethesda, Md.

Vouchers: J. D. Edens and T. J. Jones.

ASHBY, WILLIAM T., D.V.M.

R.F.D. 1, Florence, S. Car.

Vouchers: A. M. Mills and D. Sikes.

AYERS, RALPH E., D.V.M.

Rt. 1, Lexington, Va.

Vouchers: A. M. Mills and T. J. Jones.

BARNES, DONALD T., D.V.M.

Prentiss, Ky.

Vouchers: J. D. Edens and T. J. Jones.

BATTES, EDWARD S., D.V.M.

Box 398, Campus Station, Athens, Ga.

Vouchers: S. S. Kreuz and T. J. Jones.

BEARD, CHARLES W., D.V.M.

Colquitt, Ga.

Vouchers: A. M. Mills and J. D. Edens.

BENSON, THOMAS F., D.V.M.

Box 483, Campus Station, Athens, Ga.

Vouchers: A. M. Mills and P. E. Hoffman.

BOWEN, NORMAN E., D.V.M.

414 3rd Ave., Albany, Ga.

Vouchers: W. A. Knapp, Jr., and L. Taul.

BOWERSETT, ROSWELL S., D.V.M.

Box 60, Rt. 2, Laurel, Md.

Vouchers: A. M. Mills and E. W. Causey.

BROWN, DAVID L., JR., D.V.M.

605 Greenway Dr., Florence, S. Car.

Vouchers: T. J. Jones and L. T. Crimmins.

BROWN, JOSEPH E., D.V.M.

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Vouchers: S. S. Kreuz and E. W. Causey.

BROWN, PETE J., D.V.M.

700 Metal Rd., N. E., Atlanta, Ga.

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BUTLER, JAMES M., JR., D.V.M.

P.O. Box 298, Ag. Hill Station, Athens, Ga.

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CHANDLER, JOHN A., D.V.M.

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CLARKE, WILLIAM E., D.V.M.

Box 435, Ag. Hill, Athens, Ga.

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CRANE, DAVID A., D.V.M.

6257 22nd St., N., Arlington, Va.

Vouchers: T. F. Zweigart, Jr., and A. M. Mills.

CURRIE, JOSEPH E., JR., D.V.M.

Jackson Springs, N. Car.

Vouchers: J. D. Edens and T. J. Jones.

ELLISON, PATRICK D., D.V.M.

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EVERHART, FREDERICK F., JR., D.V.M.

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FLEMING, MARVIN L., D.V.M.

Campus Station, Box 78, Athens, Ga.

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FORD, DONALD C., D.V.M.

627 Sycamore St., Decatur, Ga.

Vouchers: J. D. Morton and A. M. Mills.

GISSENDANNER, ELTON J., D.V.M.

1093 N. E. 79th St., Miami, Fla.

Vouchers: P. L. Piercy and E. W. Causey.

GOUNARIS, THEODORE N., JR., D.V.M.

3812 Yolando Rd., Baltimore, Md.

Vouchers: J. D. Morton and L. K. Taul.

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HOLLINGSWORTH, WILLIS B., JR., D.V.M.

Stone Mountain, Ga.

Vouchers: T. J. Jones and L. T. Crimmins.

HUDSON, DALLAS E., D.V.M.

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Vouchers: A. M. Mills and J. D. Morton.

HUTTO, JAMES W., D.V.M.

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JOHNSON, LEROY E., D.V.M.

Westover, Md.

Vouchers: A. M. Mills and J. D. Morton.

JORDAN, HELEN E., D.V.M.

Mount Crawford, Va.

Vouchers: T. J. Jones and L. T. Crimmins.

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1102 Queen Ann, Burlington, N. Car.

Vouchers: T. J. Jones and L. T. Crimmins.

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LYNCH, J. DONALD, D.V.M.

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MCLELLAN, JAMES E., D.V.M.

215 Rockwell Terrace, Frederick, Md.

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Jackson, S. Car.
Vouchers: S. S. Kreuz and E. W. Causey.

ROACH, LAURIE E., D.V.M.
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ROOP, ROGER G., D.V.M.
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SMITH, WALTON S., Jr., D.V.M.
R.F.D. 5, Frederick, Md.
Vouchers: L. K. Taul and T. J. Jones.

SORRELL, WILLIAM R., D.V.M.
R.F.D. 3, Dunn, N. Car.
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THOMPSON, WALKER S., D.V.M.
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Box 484, Lawrenceville, Va.
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WESTMORELAND, HERMAN L., D.V.M.
Rt. 2, Box 65, Rutherfordton, N. Car.
Vouchers: D. Sikes and A. M. Mills.

WILLIAMS, W. B., D.V.M.
Big Stone Gap, Va.
Vouchers: J. D. Edens and T. J. Jones.

YERASIMIDES, THEODORE G., D.V.M.
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Vouchers: T. J. Jones and L. T. Crimmins.

University of Illinois

ALLISON, JAMES W., D.V.M.
R.R. 2, Lawrenceville, Ill.
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BRANDT, WALLACE E., D.V.M.
502 W. Oregon, Urbana, Ill.
Vouchers: R. P. Link and L. E. Boley.

CLAYTON, JOHN D., D.V.M.
R.R. 3, Polo, Ill.
Vouchers: R. D. Hatch and L. T. Boley.

COHEN, DANIEL, D.V.M.
1610 Alabama Dr., Urbana, Ill.
Vouchers: P. D. Beamer and J. O. Alberts.

DRIJJE, THOMAS M., D.V.M.
2828 S. Harlem Ave., Berwyn, Ill.
Vouchers: A. G. Schiller and B. Brodie.

ESSEY, CHARLES A., D.V.M.
1525 S. Belmont Ave., Arlington Heights, Ill.
Vouchers: L. E. Boley and H. J. Hardenbrook.

FERRELL, CARL F., Jr., D.V.M.
Beecher, Ill.
Vouchers: C. C. Morrill and D. A. Willigan.

FINNELL, JAMES H., D.V.M.
737 W. Grove St., Pontiac, Ill.
Vouchers: L. E. Boley and J. P. Manning.

FITZGERALD, JAMES E., D.V.M.
410 S. Central Ave., Paris, Ill.
Vouchers: L. E. Boley and R. D. Hatch.

FRICKE, FREDERICK E., D.V.M.
4718 Belleplaine Ave., Chicago, Ill.
Vouchers: L. E. Boley and R. D. Hatch.

HELPER, LLOYD C., D.V.M.
R.F.D. 4, Princeton, Ill.
Vouchers: A. G. Schiller and L. E. Boley.

HOLSTEIN, RALPH O., D.V.M.
5910 N. Elston Ave., Chicago, Ill.
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JESSEN, DARRELL L., D.V.M.
Hennepin, Ill.
Vouchers: P. D. Beamer and B. Brodie.

JOHNSON, PAUL E., D.V.M.
Main St., Chenoa, Ill.
Vouchers: H. J. Hardenbrook and A. G. Schiller.

JONES, NORMAN D., D.V.M.
179 Grace Ave., Elmhurst, Ill.
Vouchers: R. D. Hatch and C. C. Morrill.

JOSEPHSON, CHARLES M., D.V.M.
Monmouth, Ill.
Vouchers: L. E. Boley and R. D. Hatch.

KEOUGH, ROBERT J., D.V.M.
11235 Eggleston Ave., Chicago, Ill.
Vouchers: A. G. Schiller and L. E. Boley.

KERK, J. D., D.V.M.
309 W. Edwards, Springfield, Ill.
Vouchers: J. P. Manning and A. G. Schiller.
LARSEN, JAMES S., D.V.M.
710 N. Waiola, La Grange, Ill.
Vouchers: A. G. Schiller and H. J. Hardenbrook.
OSBORNE, DONALD V., D.V.M.
1416 S. 15th Ave., Maywood, Ill.
Vouchers: L. E. Boley and J. P. Manning.
PHILLIPS, THOMAS N., D.V.M.
1102 W. Oregon, Urbana, Ill.
Vouchers: D. J. Sullivan and R. D. Hatch.
SCHNEIDER, HARVEY D., D.V.M.
114 W. Cedar St., Champaign, Ill.
Vouchers: R. M. Thomas and P. D. Beamer.
SCHWALBE, WALTER G., D.V.M.
Box 641, Venetian Village, Lake Villa, Ill.
Vouchers: A. G. Schiller and R. D. Hatch.
SHEETS, GEORGE H., JR., D.V.M.
101 S. Alton St., Lebanon, Ill.
Vouchers: L. E. Boley and J. P. Manning.
SHIELS, JOHN A., D.V.M.
Lakewood, Ill.
Vouchers: R. D. Hatch and A. G. Schiller.
SMITH, RUSSELL D., D.V.M.
Toulon, Ill.
Vouchers: J. P. Manning and A. G. Schiller.
WAGY, THEODORE L., D.V.M.
Raymond, Ill.
Vouchers: L. E. Boley and H. J. Hardenbrook.
WINTER, ALEXANDER, D.V.M.
5528 S. Everett St., Chicago, Ill.
Vouchers: L. E. Boley and J. P. Manning.
ZIEGLER, RALPH F., D.V.M.
102 South East St., New Athens, Ill.
Vouchers: A. G. Schiller and R. D. Hatch.

Kansas State College*

All of the following applicants, with the exception of those otherwise noted, were vouched for by Drs. E. J. Frick and E. E. Leisure.

ACKERMAN, EDWARD S., D.V.M.
333 W. Calvert, Lincoln, Neb.
ALLEN, JOHN A., D.V.M.
Box 463, Orosi, Calif.
ANDREWS, WINFRED A., D.V.M.
5640 Wolcott Ave., Bethel, Kan.
BAKER, HARRY J., D.V.M.
Marietta, Kan.
Vouchers: R. A. Spring and J. W. Lumb.
BARBEE, LARRY D., D.V.M.
Sutton, Neb.
BARNEY, GEORGE H., D.V.M.
Friend, Neb.
BRACKEN, WILLIAM J., D.V.M.
3807 Terrace Ave., St. Joseph, Mo.
Vouchers: D. S. Folse and E. J. Frick.
BUTLER, CLAIR E., D.V.M.
Box 2206, Sarasota, Fla.
CARAWAY, BOBBY L., D.V.M.
2133 Kingshighway, Shreveport, La.

CHURCH, DOUGLAS L., D.V.M.
Battle Creek, Neb.
CLAYBAKER, DALE W., D.V.M.
67-D Hilltop Courts, Manhattan, Kan.
COLE, STEWARD W., JR., D.V.M.
1421 Park Place, Wichita, Kan.
COOPER, RAYMOND O., D.V.M.
1120 Kearney St., Manhattan, Kan.
COX, DONALD F., D.V.M.
Box 38, Cedar Vale, Kan.
DENHOLM, BYRON E., D.V.M.
R.R. 2, Tonganoxie, Kan.
EMERSON, BARRY C., D.V.M.
Box 487, Rt. 2, Severna Park, Md.
FAUBION, HIRAM H., D.V.M.
1815 Anderson, Manhattan, Kan.
FEATHERSTON, ROBERT H., D.V.M.
R.R. 2, Guenemo, Kan.
FEETER, JAMES W., D.V.M.
Rt. 1, Waupaca, Wis.
FERGUSON, JOHN R., D.V.M.
R.R. 2, Mankato, Kan.
FISH, RICHARD W., D.V.M.
Maynard St., Westboro, Mass.
GIER, WALTER T., D.V.M.
12820 S. Harris Ave., Compton, Calif.
Vouchers: L. M. Roderick and E. J. Frick.
GIGSTAD, DALE C., D.V.M.
Effingham, Kan.
GORDON, JOHN W., D.V.M.
1115 Custer Ave., Kansas City, Kan.
HORNGSON, DONALD F., D.V.M.
Rt. 1, Manhattan, Kan.
HUDSON, RICHARD E., D.V.M.
1123 Harrison, Topeka, Kan.
HUMPHREY, MARCUS R., D.V.M.
Wisher, Neb.
JENKINS, HAROLD E., D.V.M.
Gen. Del., Palmyra, Neb.
KING, GEORGE E., D.V.M.
R.R. 4, Rushville, Ind.
Vouchers: L. M. Roderick and R. R. Dykstra.
KUTTLER, ROSS A., D.V.M.
Tribune, Kan.
Vouchers: J. H. Cowan and M. L. Kaeberle.
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Miller, S. Dak.
MILLER, ROBERT B., D.V.M.
Box 86, Eureka, Kan.
NOVAK, ROBERT L., D.V.M.
Lost Springs, Kan.
OLSON, CHARLES L., D.V.M.
515 Magnolia, Newton, Kan.
Vouchers: M. J. Twiehaus and E. J. Frick.
OPHEIM, HOWARD D., D.V.M.
2104 Faris, Sioux Falls, S. Dak.

PARKER, RICHARD L., D.V.M.
1809 Leavenworth, Manhattan, Kan.
PAULICH, LEO F., D.V.M.
1202 N. Dellrose, Wichita, Kan.
PAUTZ, DUDLEY D., D.V.M.
R.R. 3, Hiawatha, Kan.
PAYNE, JAMES K., D.V.M.
Burton, Kan.
PETTIT, MELVIN U., D.V.M.
R.R. 3, Benkelman, Neb.
POLLARD, THOMAS D., D.V.M.
2002 Chase, Falls City, Neb.
RIZZI, EUGENE L., D.V.M.
R.R. 1, Munden, Kan.
SAMBOL, RICHARD M., D.V.M.
7340 Barnes Dr., Bethel, Kan.
SCOTT, RIBBLE L., D.V.M.
1839 Wood Ave., Kansas City, Kan.
SHIRES, MAURICE L., D.V.M.
2311 Jefferson St., Bellevue, Neb.
SIMPER, JAMES T., D.V.M.
351 E. 1st S., Pleasant Grove, Utah.
TAYLOR, DANFORTH D., D.V.M.
Howard, S. Dak.
THEBERT, ELLSWORTH E., D.V.M.
20 W. Evans St., Rice Lake, Wis.
TUMA, ROBERT V., D.V.M.
242 E. 72nd St., New York, N. Y.
VICKERY, ROLLIN W., D.V.M.
250 North Bluff, Wichita, Kan.
WADBELL, DONALD L., D.V.M.
1219 Poyntz, Manhattan, Kan.
WAMPLER, RICHARD L., D.V.M.
Courtland, Kan.
WEICH, CARROLL K., D.V.M.
R.R. 1, Hoskins, Neb.
WILTFONG, M. J., D.V.M.
424 W. Wilton, Norton, Kan.

University of Missouri

BLAKE, FLOYD D., D.V.M.
Morse Mill, Mo.
Vouchers: O. S. Crisler and J. T. McGinity.
BOZARTH, JAMES W., D.V.M.
Bates City, Mo.
Vouchers: A. W. Uren and A. H. Groth.
CAHILL, WILLIAM E., D.V.M.
7019 Raytown Rd., R.R. 6, Hickman Mills, Mo.
Vouchers: E. F. Ebert and J. T. McGinity.
CHANDLER, CLYDE L., D.V.M.
2312 N.W. 23rd Ct., Miami, Fla.
Vouchers: A. H. Groth and E. F. Ebert.
DEWEESE, JOYCE E., D.V.M.
Marceline, Mo.
Vouchers: E. F. Ebert and C. Elder.
FLINT, ERNEST W., D.V.M.
8 "O" St., Columbia, Mo.
Vouchers: E. F. Ebert and J. T. McGinity.
FLOWERS, MARION R., D.V.M.
R.R. 2, Macon, Mo.
Vouchers: J. E. English, Jr., and J. T. McGinity.

FREDMAN, JOHN D., D.V.M.
2100 Mason Rd., Burlington, Iowa.
Vouchers: E. F. Ebert and J. T. McGinity.
GROSSE, CHARLES W., D.V.M.
5217 Independence Ave., Kansas City, Mo.
Vouchers: O. S. Crisler and A. H. Groth.
GROVES, ROBERT S., D.V.M.
R.R. 1, Mexico, Mo.
Vouchers: A. H. Groth and E. F. Ebert.
HEUTEL, LEE B., D.V.M.
Rt. 12, Box 294, Kirkwood, Mo.
Vouchers: E. F. Ebert and J. T. McGinity.
HOLT, LELAND H., D.V.M.
R.R. 1, Golden City, Mo.
Vouchers: C. J. Bierschwal, Jr., and A. H. Groth.
IMES, GEORGE D., JR., D.V.M.
5415 E. 16th Terrace, Kansas City, Mo.
Vouchers: L. D. Kintner and J. A. McGinity.
INGRAM, SIDNEY H., D.V.M.
R.F.D. 9, Springfield, Mo.
Vouchers: C. Elder and C. J. Bierschwal, Jr.
McGINNIS, JAMES P., D.V.M.
49 "R" St., Columbia, Mo.
Vouchers: A. W. Uren and A. H. Groth.
MILLER, JACOB L., D.V.M.
813 Rollins, Columbia, Mo.
Vouchers: A. H. Groth and A. W. Uren.
OWINGS, FON E., D.V.M.
Keytesville, Mo.
Vouchers: A. H. Groth and A. J. Durant.
NIEMEYER, KENNETH H., D.V.M.
7645 Delmar Blvd., St. Louis, Mo.
Vouchers: A. H. Groth and S. Smith.
POPE, ROBERT E., D.V.M.
1207 Paquin, Columbia, Mo.
Vouchers: J. T. McGinity and E. F. Ebert.
PRATHER, JAMES K., D.V.M.
301 Pershing Rd., Columbia, Mo.
Vouchers: E. F. Ebert and A. H. Groth.
RANOLPH, JAMES R., D.V.M.
1131 W. Worley, Columbia, Mo.
Vouchers: C. J. Bierschwal, Jr., and A. W. Uren.
SNELL, MARVIN A., D.V.M.
R.R. 2, Paris, Mo.
Vouchers: A. H. Groth and E. F. Ebert.
STEFFAN, FRED F., D.V.M.
40 "R" St., Columbia, Mo.
Vouchers: A. H. Groth and E. F. Ebert.
STONE, NELSON L., D.V.M.
Rt. 1, Farmington, Mo.
Vouchers: J. T. McGinity and C. J. Bierschwal, Jr.
WHITE, NELSON L., D.V.M.
Sarcoxie, Mo.
Vouchers: A. W. Uren and P. M. Newberne.
WHITTED, HAROLD H., D.V.M.
18 King St., Columbia, Mo.
Vouchers: E. F. Ebert and J. T. McGinity.
WILSON, RAYMOND J., D.V.M.
Pleasant Hope, Mo.
Vouchers: A. A. Case and A. H. Groth.

WRIGHT, HAROLD B., D.V.M.
R.F.D. 2, Kearney, Mo.
Vouchers: J. T. McGinity and A. W. Uren.

University of Pennsylvania

GATES, KEITH W., V.M.D.
Box 18, Adah, Pa.
Vouchers: F. G. Fielder and F. Kral.
HOGE, ROBERT S., V.M.D.
10 Bell Ave., Pittsburgh, Pa.
Vouchers: J. H. Mark and J. E. Martin.
SCHMITT, CLEMENT A., JR., V.M.D.
R.D. 1, Wheeling, W. Va.
Vouchers: R. S. Brody and F. Kral.
WILSON, GEORGE P., III, V.M.D.
180 Longwood Ave., Boston, Mass.
Vouchers: J. E. Martin and J. H. Mark.

Texas A. & M. College

DURHAM, PAUL R., D.V.M.
Apt. B-8-A, College View, College Station,
Texas.
Vouchers: R. J. Beamer and C. M. Patterson.
LIVINGSTON, CHARLES W., JR., D.V.M.
Texas Agricultural Experiment Station, Sub-
station No. 14, Sonora, Texas.
Vouchers: H. E. Redmond and R. J. Beamer.
VAUGHAN, MAURICE H., D.V.M.
Rt. 2, Floyd, Va.
Vouchers: A. A. Lenert and W. C. Banks.

Washington State College*

AMBROSE, WILLARD J., D.V.M.
3314 N. Park Rd., Spokane, Wash.
Vouchers: D. M. Fluharty and W. Hawk.
ANDERSON, CHARLES K., D.V.M.
c/o W. J. Ewing, 2318 N. 36th St., Boise, Idaho.
Vouchers: C. H. Eby and R. L. Ott.
ARMFIELD, WILLIAM W., D.V.M.
2724 W. Kiernan Ave., Spokane, Wash.
Vouchers: W. Hawk and J. D. Robinette.
BENTLEY, WILLIAM F., D.V.M.
Box 104, College Station, Pullman, Wash.
Vouchers: E. C. Stone and R. W. Leader.
BLACKMORE, WILLIAM M., D.V.M.
38-C S., Fairway, Pullman, Wash.
Vouchers: R. L. Ott and C. H. Eby.
BOGGS, MELFORD E., D.V.M.
Box 519, Cottage Grove, Ore.
Vouchers: W. Hawk and R. W. Leader.
BOHLKE, WILMER D., D.V.M.
Rt. 1, Box 67, Selah, Wash.
Vouchers: F. K. Bracken and W. Hawk.
BROCK, WILLIAM W., D.V.M.
Dayville, Ore.
Vouchers: J. D. Robinette and R. L. Ott.
BROWN, LAUREN S., D.V.M.
870 E. Baseline, Hillsboro, Ore.
Vouchers: G. H. Keown and W. Hawk.
CARLON, DORIS, D.V.M.
Riley, Ore.
Vouchers: R. L. Ott and C. H. Eby.
CARTER, WALTER E., D.V.M.
6555 N. Interstate Ave., Portland, Ore.
Vouchers: R. L. Ott and J. A. McCurdy.

CREER, KENNETH B., D.V.M.
Alpine Animal Clinic, Provo, Utah.
Vouchers: R. Ott and E. C. Stone.
CURNOW, EUGENE E., D.V.M.
2805 Elmore St., Seattle, Wash.
Vouchers: P. A. Klavano and J. A. McCurdy.
DOWE, JAMES T., D.V.M.
Box 506, Calexico, Calif.
Vouchers: R. L. Ott and G. H. Keown.
FAIRBROTHER, GUY R., D.V.M.
1000 N. Kimball Ave., Caldwell, Idaho.
Vouchers: C. H. Eby and J. D. Robinette.
FARRELL, R. KEITH, D.V.M.
31-D S. Fairway, Pullman, Wash.
Vouchers: J. Gorham and R. L. Ott.
GOBBATO, GIULIO C., D.V.M.
Custer, Wash.
Vouchers: R. P. Worthman and W. M. Dickson.
GOURDY, GEORGE A., D.V.M.
43-28th Ave., San Mateo, Calif.
Vouchers: R. P. Worthman and J. A. McCurdy.
GOURLAY, IRA M., D.V.M.
1133 Porter Ave., Ogden, Utah.
Vouchers: J. A. McCurdy and R. L. Ott.
GRUNBAUM, HANS H., D.V.M.
3285 S.W. 78th Ave., Portland, Ore.
Vouchers: R. L. Ott and J. D. Robinette.
HAMMERICH, WILMER E., D.V.M.
1768 Silverado Trail, Napa, Calif.
Vouchers: W. Hawk and Jack D. Robinette.
HARRIS, WILLIAM H., D.V.M.
9638 47th S.W., Seattle, Wash.
Vouchers: J. D. Robinette and R. D. Conrad.
HARSCH, JERRY A., D.V.M.
925 11th Ave., N., Seattle, Wash.
Vouchers: R. L. Ott and G. H. Keown.
JACOBSEN, PAUL, D.V.M.
Box 273, Morton, Wash.
Vouchers: J. H. Stewart and J. D. Robinette.
JENISCH, ALBERT J., D.V.M.
2022 E. Fourth, Olympia, Wash.
Vouchers: E. C. Stone and G. H. Keown.
KELSY, PETER C., D.V.M.
Box 373 C. S., Pullman, Wash.
Vouchers: J. A. McCurdy and J. R. Gorham.
LONG, DAVID E., D.V.M.
Rt. 2, Box 105, Ferndale, Wash.
Vouchers: E. C. Stone and J. D. Robinette.
MCENANY, VINCENT H., D.V.M.
707 E. 38th Ave., Spokane, Wash.
Vouchers: R. P. Worthman and C. H. Eby.
MEIERS, EUGENE C., D.V.M.
814 Springs St., Pullman, Wash.
Vouchers: P. A. Klavano and J. S. Dunlap.
MONTGOMERY, ERNEST D., D.V.M.
2042 15th Ave., W., Seattle, Wash.
Vouchers: J. H. Stewart and C. H. Eby.
NELSON, JOHN D., D.V.M.
16700 Merchant Rd., Los Gatos, Calif.
Vouchers: J. D. Robinette and R. L. Ott.
NELSON, NORMAN W., D.V.M.
Bannack Star Route, Dillon, Mont.
Vouchers: G. H. Keown and J. D. Robinette.

NEWMAN, MELVIN L., D.V.M.
Rt. 3, Shelton, Wash.
Vouchers: J. R. Gorham and D. M. Fluharty.

OTTER, JASON I., D.V.M.
15 Dayton, Fresno, Calif.
Vouchers: R. L. Ott and G. H. Keown.

PONTIUS, ROBERT V., D.V.M.
1291 North 2nd West, Bountiful, Utah.
Vouchers: D. M. Fluharty and W. M. Dickson.

QUERIN, OLIVER S., D.V.M.
Rt. 1, Box 446, c/o C. C. Querin, Sunnyside, Wash.
Vouchers: E. C. Stone and W. M. Dickson.

RASKIN, JAMES B., D.V.M.
2360 Fairgrounds Rd., Salem, Ore.
Vouchers: G. H. Keown and R. L. Ott.

SKOV, MILTON, D.V.M.
31-A S. Fairway, Pullman, Wash.
Vouchers: P. A. Kalyano and G. H. Keown.

STOKKE, HENRY A., D.V.M.
Box 2119, C. S., Pullman, Wash.
Vouchers: R. L. Ott and W. Hawk.

TURCOTTE, RAYMOND L., D.V.M.
Columbus, Mont.
Vouchers: R. L. Ott and C. H. Eby.

WALDRON, FRANK D., D.V.M.
Rt. 2, Box 2AA, Ellensburg, Wash.
Vouchers: F. K. Bracken and R. W. Leader.

U. S. GOVERNMENT

Change in Age Limitation for Veterinarians in Brucellosis Work.—The Animal Disease Eradication Branch (ARS) has issued supplement No. 2 to a previous memorandum which will permit the employment of practicing veterinarians, who are 70 years of age or over, on a fee basis to conduct brucellosis work.

The AVMA received numerous requests from members objecting to the previous age limitation policy of the Department. It is pleasing to be able to report that this restriction no longer applies.

Veterinary Personnel Changes.—The following changes in the force of veterinarians in the U.S.D.A. Agricultural Research Service are reported as of May 20, 1955.

NEW APPOINTMENTS

Janis V. Auseklis, Spokane, Wash.
Victor H. Berry, Milwaukee, Wis.
William D. Daugherty, Indianapolis, Ind.
Robert A. Dickinson, Montgomery, Ala.
Algirdas Dysas, Des Moines, Iowa.
Philip J. Ewald, Baton Rouge, La.
Norman W. Eyl, Denver, Colo.
John W. Foley, Madison, Wis.
Monte N. Frazier, Augusta, Maine.
Jonathan G. Harmeling, Madison, Wis.
Harold W. Householder, Portland, Ore.
Ivan Hura, Baltimore, Md.
James R. Kinsaul, Montgomery, Ala.
Paul H. Kramer, Columbus, Ohio.
Albinas Liauba, Cincinnati, Ohio.
Clarence A. Love, Oklahoma City, Okla.
James M. Love, Columbia, S. Car.

John G. Mackay, Jacksonville, Fla.
Stanley E. Peters, Baron Rouge, La.
Elmo E. Petitjean, Baron Rouge, La.
Thomas P. Strittmatter, Jr., Cincinnati, Ohio.
Joseph A. Wilkinson, Fort Worth, Texas.

RESIGNATIONS

Franklin W. Binkley, Indianapolis, Ind.
Carl E. Chase, Augusta, Maine.
George C. Cilley, Augusta, Maine.
Roger D. Donnelson, Suffolk, Va.
Frederick V. Dederick, Augusta, Maine.
Clarence H. Forthman, Cheyenne, Wyo.
James L. Fowler, Jacksonville, Fla.
Forris B. Frick, Portland, Ore.
Melvin D. Hale, Augusta, Maine.
Leonard R. Haubrich, Augusta, Maine.
Wilson R. Haubrich, Augusta, Maine.
Allen F. Hill, Augusta, Maine.
Herbert C. Holt, Montgomery, Ala.
James A. Jermier, Waterloo, Iowa.
George M. Johnson, Augusta, Maine.
Jack R. Jones, Memphis, Tenn.
Dana H. Lee, Augusta, Maine.
Walter B. Loring, Augusta, Maine.
Dorian Lugo-Rubio, San Juan, P. R.
A. J. Mabry, Baron Rouge, La.
Carl L. Martin, Augusta, Maine.
Robert B. Moody, Jefferson City, Mo.
Charles B. Place, Augusta, Maine.
Vytas P. Rastas, South St. Paul, Minn.
Joseph S. Ruhe, Houston, Texas.
Murray H. Sherber, Oklahoma City, Okla.
Charles P. Smith, Lansing, Mich.
Forrest F. Tenney, Augusta, Maine.
Grant B. Terrell, Kansas City, Kan.
Benners B. Vail, Jr., Houston, Texas.
James E. Varady, Los Angeles, Calif.
John H. Westfall, Augusta, Maine.
William P. Williams, Columbia, S. Car.
Russell D. Williamson, Washington, D. C.

RETIREMENTS

Hugh L. Fry, Nashville, Tenn.
John W. George, Jefferson City, Mo.
Henry Gutsch, Milwaukee, Wis.
Leonard T. Langland, San Francisco, Calif.
Bernard C. Meade, New York, N. Y.
Edwin L. Peck, Sioux City, Iowa.
Lawrence M. Putney, Chicago, Ill.
Allen W. Rice, Little Rock, Ark.
Harry W. Schoening, Beltsville, Md.
John H. Smyth, Chicago, Ill.
Lawrence L. Taylor, Portland, Ore.
John A. Teie, Grand Forks, N. Dak.

TRANSFERS

Robert L. Alkire, from Lansing, Mich., to Hartford, Conn.
Robert K. Benn, from Oklahoma City, Okla., to South St. Joseph, Mo.
Paul P. Boriskie, from Mexico City, Mex., to Phoenix, Ariz.
Don R. Bowers, from Baton Rouge, La., to Charleston, W. Va.
Erston S. Cox, from Jefferson City, Mo., to Denver, Colo.
Marion T. Cox, from Reno, Nev., to Los Angeles, Calif.
Howard B. Davis, from Boston, Mass., to Hartford, Conn.
Oliver T. Douglas, from San Antonio, Texas, to Kinston, N. Car.
John B. Favara, from Chicago, Ill., to Pierre, S. Dak.
Philip D. Fichandler, from Boston, Mass., to Hartford, Conn.
Solon Gillen, from Cleveland, Ohio, to Columbus, Ohio.
William B. Greene, from Omaha, Neb., to Sioux City, Iowa.

*On the Agricultural Research Service Report for March 4, 1955 (May, 1955 JOURNAL: p. 438), these were reported as terminations.

Carl D. Grilin, from San Francisco, Calif., to Houston, Texas.

James Guess, from Bismarck, N. Dak., to Cleveland, Ohio.

Orville J. Halverson, from Cheyenne, Wyo., to Phoenix, Ariz.

J. Howard Hathaway, from Sioux City, Iowa, to Nampa, Idaho.

Cecil L. Hendee, from Jackson, Miss., to Lansing, Mich.

George O. Johnson, from Berkeley, Calif., to Omaha, Neb.

Earl M. Jones, from Fort Worth, Texas, to Albuquerque, N. M.

Robert P. Jones, from Columbus, Ohio, to Washington, D. C.

Edgar L. Judy, Jr., from Mexico City, Mex., to Fort Worth, Texas.

Oren L. Kelsey, Jr., from San Francisco, Calif., to Topeka, Kan.

William O. Ker, from South St. Paul, Minn., to Edgar, Wis.

Laurence P. McCain, from Kinston, N. Car., to Sioux City, Iowa.

Ralph E. Nelson, from Fort Dodge, Iowa, to Kansas City, Kan.

Dearrold I. F. Palmer, from Kansas City, Kan., to Omaha, Neb.

Gerald V. Peacock, from Omaha, Neb., to Berkeley, Calif.

Dudley B. Pellette, from Topeka, Kan., to Oklahoma City, Okla.

William M. Petersen, from Olympia, Wash., to Sacramento, Calif.

John D. Puppl, from Cincinnati, Ohio, to Columbus, Ohio.

Ted Rea, from Phoenix, Ariz., to Albuquerque, N. M.

William W. Rosenberry, from Wichita, Kan., to Los Angeles, Calif.

Louis H. Smith, from Denver, Colo., to Topeka, Kan.

Dale Suplee, from Charleston, W. Va., to Olympia, Wash.

Billy J. Swope, from Helena, Mont., to Fort Worth, Texas.

John E. Taylor, from Boston, Mass., to Hartford, Conn.

James E. Williams, from Washington, D. C., to Beltsville, Md.

AMONG THE STATES AND PROVINCES

The deadline for news copy is the 24th of the month, two months preceding the month of issue

Arizona

Central Association.—The Central Arizona Veterinary Medical Association held its regular monthly meeting at the American Legion Hall in Tempe on April 11. Dr. G. Calderwood was host. The meeting was an open discussion of minimum fees for the small animal practitioners of the Association. Officers for the fiscal year 1955 were elected as follows: Drs. B. Mariassy, Phoenix, president; T. Raimonde, Mesa, vice-president; and Keith Maddy, Phoenix, secretary-treasurer. Dr. E. B. Powell, Scottsdale, was selected as member-at-large for the executive committee.

At the May 10 meeting, Dr. V. H. Ueckert was the host and Dr. J. L. Hydrick, M.D., spoke on his experiences in public health work in Peru. During the business meeting, the following committee members were announced: grievance committee—Drs. K. Lassen, Mesa;

T. Smith, Coolidge; M. Smith, Safford; and W. Snodgrass, Glendale; public relations—Drs. D. Miller, D. Fox, and H. Hood, Phoenix; legislation—Drs. D. Hott, R. McComb, and S. Shapera, Phoenix; large animal—Drs. J. Fuller, Phoenix; J. Carney, Chandler; and D. Watt, Glendale; small animal—Drs. F. Benton, Mesa; J. Sharkey, Phoenix; and R. Mitchell, Phoenix.

Need for more interest and concern on pending brucellosis legislation was discussed. A report was made on the weekly series of television programs.

s/KEITH T. MADDY, *Secretary*.

California

Central California Association.—The April 26 meeting of the Central California Veterinary Medical Association was held in the Cypress Room of the Hotel Californian. Mr. Robert Smith of E. I. Du Pont, Inc., showed a sound and color motion picture on the uses of phenothiazine.

s/HERBERT N. PIPER, *Secretary*.

Connecticut

State Association.—The regular quarterly meeting of the Connecticut Veterinary Medical Association was held at the Hotel Bond in Hartford on May 4, with 70 members in attendance. Following the business meeting and dinner, Dr. Kenneth B. Haas of the Upjohn Company, Kalamazoo, Mich., gave an illustrated talk on good business practices. Dr. George H. Ludins, Hartford, was moderator of a panel on veterinary practice management in Connecticut. Other participants in this panel were Drs. H. H. Gardner, Bantam; R. F. Strasburger, Newton; W. R. Leggett, Westport; Niel W. Pieper, Middletown; and M. H. Ryan and R. A. Rands, Stamford. The program gave a most interesting picture of the complex setup and the conflicting problems involved in the operation of different types of veterinary practice.

s/NIEL W. PIEPER, *Resident Secretary*.

E. H. PATCHEN, *Executive Secretary*.

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Fairfield County Association.—On April 13, Dr. John T. McGrath, associate professor of veterinary pathology, School of Veterinary Medicine, University of Pennsylvania, discussed spinal paralysis (with illustrations) at the dinner meeting of the Fairfield County Veterinary Medical Association at the Chimney Corners Inn, Stamford.

s/WILLIAM R. LEGGETT, *Secretary*.

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Death of Dr. G. E. Corwin.—Dr. George E. Corwin (USC '03), 76, of Hartford died on April 11, 1955. Former state veterinarian and a pioneer in livestock disease control work in the state, he engaged in general practice for 18 years before accepting the post of deputy

commissioner of domestic animals in 1921. He so served for eight years and was again appointed in 1933. From 1947 to 1949, he was state veterinarian in the Department of Farms and Markets. He retired in 1949.

From 1930 to 1933, Dr. Corwin was assistant director of the Massachusetts Division of Animal Industry and from 1941 to 1947 he was city meat inspector of Hartford. He was well known for his pioneer work in bovine tuberculosis control and for helping to perfect the intradermal test. He campaigned successfully for state meat inspection laws, antirabies vaccination programs, and disease control in cattle, especially brucellosis.

Dr. Corwin was active for many years in professional association work and livestock disease control circles. He was a former president of the Connecticut Veterinary Medical Association which he also served as secretary-treasurer for a number of years. He had been a member of the AVMA since 1915.

Georgia

South Georgia Association.—The South Georgia Veterinary Medical Association met in Tifton on April 24. Dr. T. Sutton, Sylvester, conducted the meeting which was on research projects in progress at the animal disease department of the Georgia Coastal Plain Experiment Station. These include the search for a laboratory diagnostic test for hog cholera, toxic mold poisoning, salt poisoning, and anaerobic bacteriological techniques.

Suggestions for improving the diagnostic service at the laboratory were discussed and selected slides from the collection at the laboratory were shown. An interesting presentation of various practice problems followed.

Dr. Steele Studies in Europe.—Dr. James H. Steele, chief veterinarian of the U. S. Public Health Service's Communicable Disease Center at Atlanta, left May 19 for Europe where he studied veterinary public health problems. He went first to Geneva, Switzerland, where he met with the Expert Committee on Zoonoses of the World Health Organization and later visited universities and research centers in England, France, and Germany, returning to this country late in June.

Indiana

Dr. Slatter Heads Swine Disease Control Program.—Dr. E. E. Slatter (OSU '30), who practiced at Danville, Ill., from 1938 to 1953, accepted a position with the office of the state veterinarian of Indiana on April 1, 1955. His title is director of swine disease control programs, a new type of position in which his duties are the coordination of the activities of the swine breeders and the practicing veteri-

narians. This effort is being made by the newly organized Indiana Swine Health Council of which Dr. Slatter is the secretary.

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Michiana Association.—Three new members were welcomed at the May 12 meeting of the Michiana Veterinary Medical Association: Drs. Harold Peigh, LaCrosse; Richard Schaub, New Carlisle; and Paulette Stogis, South Bend. This increases the membership of the Association to 60.

The speakers at the scientific session were: Dr. Glen Reed and Mr. George Parsons of the dairy department, Michigan State College, who reported on the Michigan brucellosis program; and Dr. Wayne Riser, Skokie, Ill., who discussed tumors in dogs.

s/L. D. RAMSAY, *Secretary*.
J. L. KIXMILLER, *Resident Secretary*.

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Northeastern Association.—On May 10, members of the Northeastern Indiana Veterinary Medical Association met at the Orchard Ridge Country Club in Waynedale to hear Dr. John R. Ramge of Ohio State University, Columbus, discuss sterility in cattle.

The women were entertained with a demonstration of cake decorating.

s/J. L. KIXMILLER, *Resident Secretary*.

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Northwestern Association.—The Northwestern Indiana Veterinary Medical Association met in Pine Village on April 28 to hear Mr. Ralph Cochrane tell of his experiences as a blind student at Purdue University.

Dr. Roe King, president of the state Association, and his wife attended the meeting.

s/J. L. KIXMILLER, *Resident Secretary*.

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Ninth District Association.—The Ninth District (Ind.) Veterinary Medical Association met in North Vernon on April 22 to hear Dr. Floyd Mohler, M.D., of Columbus, speak on bone fractures in man and the methods used to reduce them. He illustrated his talk with slides and pointed out veterinary applications.

The women were entertained by Mrs. Elrod at the residence of Dr. and Mrs. Elrod who were hosts to the group.

s/J. L. KIXMILLER, *Resident Secretary*.

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Tenth District Association.—The Tenth District (Ind.) Veterinary Medical Association met in Pendleton on April 21. The guest speaker was Mr. Richard Worth, director of public education of the Anderson schools, who told how veterinarians can serve in the civil defense program.

The women observed a film on civil defense and enjoyed card games. Hosts at the meeting were Drs. and Mesdames Hugh Mingle and John S. Baker.

s/J. L. KIXMILLER, *Resident Secretary*.

Death of Dr. S. H. Regenos.—Dr. Showley H. Regenos (OSU '13), 65, Zionsville, former director of biological laboratories, then business manager and head of the diagnostic services for the Pitman-Moore division of Allied Laboratories, Inc., died on April 16, 1955, after several months' illness. Born at Claypool in 1889, he had spent most of his professional life with the company which he served with distinction, having developed its early line of biological products and its production facilities. At the time of his death, he was a member of the editorial staff of the *Allied Veterinarian*.

Dr. Regenos was active in professional circles; he served in the Veterinary Corps of the U. S. Army in World War I, joined the AVMA in 1918, and was made a life member in 1954.

Survivors include his widow, the former Frances Deeg whom he married in 1913; two daughters; a sister and brother; and six grandchildren.

Iowa

Eastern Association Clinic.—More than 200 veterinarians registered for the twenty-first annual practitioners' clinic of the Eastern Iowa Veterinary Association at Hawkeye Downs in Cedar Rapids on May 10, 1955.

Participants in the poultry and swine diagnostic section were: Drs. Birk C. Lowther, Hopkinton, chairman; J. D. Ray, White Hall, Ill.; R. M. Hofferd, Cedar Rapids; C. D. Lee, Ames; M. L. Spear, Ames; R. L. Winegarden, Waterloo; and William H. Calhoun, Riceville. Small animal diagnostic section—Drs. C. B. Thayer, Iowa City, chairman; Russell H. Anthony, Cedar Rapids; Marvin I. Thiele, Marshalltown; Merrill M. Vanderloo, Dubuque; and R. J. Cowles, Burlington. Large animal diagnostic section—Drs. Lester Proctor, Oelwein, chairman; E. J. Dahlquist, Fayette; Harry McCreedy, Ottumwa; M. J. Johnson, Ames; B. W. Kingrey, Ames; Robert D. Lofton, Osage. Demonstrations of public health requirements of milk supply—Mr. Jim Evers, Cedar Rapids; and Dr. L. A. Pierce, U. S. Agricultural Research Service, Cedar Rapids. Artificial breeding techniques—Dr. James W. Pirie, Cedar Rapids. Surgical demonstrations—Drs. John Carey, West Liberty, chairman; Warren E. Bowstead, Lowden; O. W. Whitcomb, Ames; J. W. Sexton, Sumner; Maurice C. Larson, Keystone; O. G. Feuerbach, Preston; Robert O. Sander, Waukon; Nathaniel R. Waggoner, Olin; Paul A. Weires, Jr., Allison; Paul J. McAndrew, Kalona; Milton R. Flickinger, Washington; and John Janss, Jr., Belle Plaine. Bovine sterility and palpation demonstration—Drs. John Herrick, Ames; H. B. Hunter, Coggon; John O'Brien, Ryan; and Earl L. Wahl, Anamosa. Meat inspection display—Dr. O. W. Anderson, U. S. inspector in

charge, Davenport. Practice gadget contest—Drs. M. L. Sipe, Parkersburg, chairman; and John B. Bryant, Mount Vernon, Iowa.

S/GRANT B. MUNGER.

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North Central Association.—On April 21, the North Central Iowa Veterinary Medical Association held its annual meeting at the Warden Hotel in Fort Dodge with a registration of 114.

The following officers were elected for the coming year: Drs. R. N. Brenny, Pocahontas, president; R. H. Ahrens, Jewell, president-elect; and H. Engelbrecht, Fort Dodge, secretary-treasurer. Members of the executive board are: Drs. Wayne Emerson, Eagle Grove; John Morton, Webster City; and J. R. Rosdail, Pomeroy.

The professional program was outstanding: Drs. E. R. Frank, Kansas State College, Manhattan, spoke on clinical observation of the cow; B. W. Kingrey, Iowa State College, Ames, on traumatic gastritis; W. J. Kilpatrick, Minneapolis, swine practice; and reports were given by Drs. H. C. Smith, president of the state Association; H. U. Garrett, state veterinarian, Des Moines; and C. W. Brown, U.S.D.A., Des Moines.

S/H. ENGELBRECHT, Secretary.

Kansas

Conference for Veterinarians.—The seventeenth annual conference for Kansas veterinarians was held June 2-4, 1955, at the School of Veterinary Medicine, Kansas State College, Manhattan.

Guest speakers and their subjects included: Drs. W. A. Hagan, New York State Veterinary College, Cornell University, Ithaca, animal diseases and human health; J. W. Gowen, Iowa State College, Ames, immunity; Brig. Gen. E. W. Young, chief, Veterinary Division, Office of the Surgeon General, Washington, D. C., military aspects of veterinary medicine; Drs. G. R. Moore, Michigan State College, East Lansing, dairy and beef cattle practice; Floyd Cross, president-elect of the AVMA, Colorado A. & M. College, Fort Collins, diseases of sheep; F. B. Ogilvie, Kansas City, small animal practice; C. A. Brantly, University of Wisconsin, Madison, respiratory diseases of poultry; R. B. Helmig, Cresco, Iowa, swine practice; G. T. Easley, Sulphur, Okla., sterility in beef cattle; Drayford Richardson, Kansas State College, diethylstilbestrol in beef cattle; and C. D. Van Houweling, director, Livestock Regulatory Programs, U.S.D.A., ARS, Washington, D. C., animal disease control.

During the conference, on June 2, those in attendance celebrated the golden anniversary and building dedication exercises of the School of Veterinary Medicine, during which three

outstanding Kansas State College veterinary graduates were presented distinguished service awards by President James A. McCain. They were Drs. C. A. Blandy (KSC '23), head of the Department of Veterinary Science, University of Wisconsin, Madison; Brig. Gen. E. W.



Brigadier General E. W. Young (left), Dr. C. A. Blandy, and Brigadier General W. O. Kester.

Young (KSC '25), chief of the Veterinary Division, U. S. Army, Office of the Surgeon General, Washington, D. C.; and Brig. Gen. W. O. Kester (KSC '31), chief, Veterinary Corps, U. S. Air Force.

s/E. E. LEASURE, Dean.

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Central District Association.—On March 27, approximately 90 members of the Central Kansas District Veterinary Medical Association met in Herington. The program listed the following speakers and their subjects: Drs. D. Pellette, R. S. Pyles, and E. H. Nordstrom, Wichita, brucellosis eradication program; and Harry Spring, Manhattan, sterility in cattle.

s/K. M. CURTS, Resident Secretary.

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Northeast District.—The March 20 meeting of the Northeast Kansas District Veterinary Medical Association was held at the Dykstra Veterinary Hospital in Manhattan.

The program speakers and their subjects were: Drs. J. A. Bradbury, Topeka, wound dressing techniques; H. E. Gill, Manhattan, bleeding swine; W. P. Kirkeminde, Wamego, spaying heifers; F. A. Baker and L. Richardson, Kansas State College, feeding estrogen; and E. H. Nordstrom, Topeka, brucellosis program.

s/K. M. CURTS, Resident Secretary.

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Southeast District Association.—The Southeast Kansas District Veterinary Medical Association met at the Parsonian Hotel in Parsons on February 20, with Drs. M. D. Morris, O. W. Morris, T. P. Crispell, and R. M. Crispell as hosts. The following speakers participated in a discussion of the new federal-state brucellosis eradication program: Drs. D. B. Pellette and E. H. Nordstrom, Topeka; G. A. Mullen, McCune; and Mr. A. G. Pickett and Drs. R. S.

Pyles and John Harris, state veterinarians, Wichita.

s/K. M. CURTS, Resident Secretary.

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Sedgwick County Association.—The following officers were elected at the February 10 meeting of the Sedgwick County Veterinary Medical Association: Drs. Floyd O. Steele, Wichita, president; G. T. Bronsin, Wichita, vice-president; Ernest Boley, Harveyville, secretary-treasurer; R. H. Gump and G. W. Allen, Wichita, directors.

s/K. M. CURTS, Resident Secretary.

Massachusetts

Veterinary Symposium.—On April 13, 1955, a symposium on recent advances in the use of ACTH, hydrocortisone, and cortisone in veterinary medicine was held at the Sheraton-Plaza Hotel in Boston. The participants were: Drs. H. L. Easterbrooks, Storrs, Conn.; Albert E. Renold, M.D., Harvard Medical School; John E. Martin, Philadelphia, Pa.; Francis T. Candlin, Denver, Colo.; Ralph Povar, East Providence, R. I.; James W. Armstrong, Cranston, R. I.; Francis J. Fitzgerald, Fitchburg; Julio J. Malnati, North Adams; Forrest F. Tenney, Peterborough, N. H.; Russell W. Pinfold, Brunswick, Maine; Roy E. Nichols, Madison, Wis.; Robert B. Johnson, College Park, Md.; Jesse Sampson, Urbana, Ill.; John P. Mixner, Ph.D., Sussex, N. J.; William J. Tyznik, Columbus, Ohio; L. H. Schultz, Ph.D., Ithaca, N. Y.; and J. A. Dye, Ph.D., Ithaca, N. Y.

s/R. F. VIGUE.

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State Association.—The regular monthly meeting of the Massachusetts Veterinary Medical Association was held May 25 at the Paige Laboratory, University of Massachusetts, Amherst. The program included a discussion of the repeat breeder cow by Dr. Wallace G. Black, University of Massachusetts; the brucellosis program by Dr. Elwin R. Coon, U.S.D.A., ARS, Boston; and of leptospirosis by Dr. Russell E. Smith, University of Massachusetts.

s/C. LAWRENCE BLAKELY, Secretary.

Michigan

State College Becomes University.—On July 1, 1955, Michigan State College became Michigan State University by an act of the state legislature. The eighth largest university in the United States, Michigan State has an enrollment of 15,500 and offers 126 courses of study, more than 70 of which are also on the graduate level. Founded in 1855 as the Michigan Agricultural College, its name was changed by the Michigan legislature in 1925 to Michigan State College. Because graduation exercises were held June 5, members of the senior class voted

to have diplomas mailed to them after July 1, so they would bear the new university designation.

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Runnells-Stafseth Day at East Lansing.—Talks, a banquet, and gifts highlighted the afternoon and evening program honoring Dr. Russell A. Runnells (MSC '16), retiring head of the Department of Animal Pathology, and Dr. Henrik J. Stafseth (MSC '17), retiring head of the Department of Microbiology, on Thursday, April 28.

It is interesting to note how the lives of these men closely parallel each other, even though their birthplaces and parental backgrounds were widely separated. Dr. Runnells was born of farm parents. After receiving his D.V.M. degree, he served as a lieutenant in the Army; taught at M.S.C. (1919-1924); served at the Virginia Agriculture Experimental station (1924-1930); taught at Iowa State College (1930-1943); and returned to Michigan State College in 1943 to head the Department of Anatomy (1943-1948), and the Department of Animal Pathology (1948-1955). He personally taught 1,524 veterinary students and wrote the text "Animal Pathology." He is an avid student of German and U. S. geography.

Dr. Henrik J. Stafseth was born in the village of Aalesund, Norway, where he received his high school and gymnasium training. He came to the United States in 1911 and was naturalized in 1918. He received his B.S. at North Dakota State College in 1915; his D.V.M. at Michigan State College in 1917, taking much of his work with Dr. Runnells; his M.S. degree in 1930, and Ph.D. in 1935. Dr. Stafseth has a wide range of interests. In addition to being a renowned bacteriologist, he is a world traveler, active in church and Kiwanis, and serves in an advisory capacity for several educational, public health, and poultry disease research groups.

In the afternoon, scientific papers were given by three former students of each man: Drs. Gerald Dickmans, Ionia, Mich.; L. M. Hutchings, Lafayette, Ind.; W. R. Hinshaw, Camp Dietrick, Md.; F. S. Markham, Pearl River, N. Y.; R. A. Packer, Ames, Iowa; and W. H. Riser, Skokie, Ill.

Over 200 friends gathered at the Michigan State College Union for the evening banquet, where Dean C. F. Clark lauded both men for their contributions to veterinary medicine and to their schools. Dr. Runnells was presented with a console television and Dr. Stafseth with an aluminum boat.

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Mid-State Association.—The regular monthly meeting of the Mid-State Veterinary Medical Association was held April 28 at the guest lodge of the National Home, Veterans of

Foreign Wars, in Eaton Rapids, with 31 members and guests present.

The guest speaker, Dr. Gabel Conner, Michigan State College, showed slides and discussed teat surgery, bovine umbilical herniorrhaphy, and displaced abomasum in the cow.

The balance of the program was devoted to further planning for the state convention.

S/ROBERT E. KADER, *Secretary.*

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Southeastern Association.—The Southeastern Michigan Veterinary Medical Association met at the Croatian Center near Detroit, on April 27. The program consisted of case reports and panel discussions.

S/GILBERT MEYER, *Secretary.*

Minnesota

Dr. Feldman Honored.—Dr. William H. Feldman of the Mayo Foundation recently received, at the fifty-first annual meeting of the National Tuberculosis Association, one of the two highest awards of the Association, the Trudeau Medal. The medal, named for Edward L. Trudeau, first president of the Association, is awarded annually for meritorious contribution on the cause, prevention, or treatment of tuberculosis.

Dr. Feldman conducted the experimental work which preceded the first clinical use of streptomycin and, with his associates, is credited with being largely responsible for laying the groundwork for the successful use of this, the first drug found to be efficacious in tuberculosis treatment.

Missouri

Kansas City Association.—The Kansas City Veterinary Medical Association met in the Livestock Exchange Building on May 17 to hear Dr. Morris Erdheim, staff veterinarian of Dawe's Laboratories, Inc., Chicago, discuss fighting livestock diseases.

S/BUSCH MEREDITH, *Secretary.*

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Greater St. Louis Association.—On May 6, members of the Greater St. Louis Veterinary Medical Association saw the motion picture "The Rumen Story," and discussed interesting clinical cases of bovine digestive disturbances.

S/LUTHER E. FREDRICKSON, *Secretary.*

New Jersey

Death of Dr. D. D. Helm.—Dr. David D. Helm, Jr., Camden, died Feb. 11, 1955, after a brief illness. Born in Camden in 1895, Dr. Helm attended Brown Preparatory College and then enrolled at the University of Pennsylvania where he received his D.V.M. degree in 1916. He practiced in Camden and was appointed sanitary inspector for the city health depart-

ment. At the time of his death, he was city health officer and registrar of vital statistics, and a member of the advisory committee of the New Jersey State and Local Health Services.

Surviving are his widow, a son, Dr. Albert H. Helm, a brother, and a sister.

North Carolina

Eastern Association.—The regularly scheduled monthly meeting of the Eastern North Carolina Veterinary Medical Association was held in Goldsboro on May 6. In the absence of the president, Dr. R. W. Smith, Dr. T. B. Bruce, Raleigh, presided. The new state regulations on the restriction of virulent hog cholera virus, business aspects of veterinary practice with special reference to income taxes, and the veterinarian in civil defense were discussed, and a panel on animal management and diseases was presented.

s/JOHN D. BAKER, *Secretary*.

Pennsylvania

Bucks-Montgomery Association.—Members of the Bucks-Montgomery Veterinary Medical Association enjoyed a round-table discussion of practice problems at the May 11 meeting at the Moose Home in Doylestown.

s/VINCENT W. RUTH, *Secretary*.

Keystone Association.—On May 25, the Keystone Veterinary Medical Association met at the School of Veterinary Medicine, University of Pennsylvania, Philadelphia. In addition to current association business, tips for practice gathered at the convention of the American Animal Hospital Association in Detroit were presented.

s/RAYMOND C. SNYDER, *Secretary*.

Death of Colonel Henry E. Hess.—Colonel Henry E. Hess, V.C. (ret.), 64, of North Wales, Pa., died on April 26, 1955, as the result of being struck by an automobile while crossing the street.

Born in Philadelphia in 1891, Colonel Hess received his V.M.D. degree from the School of Veterinary Medicine, University of Pennsylvania, in 1911. He entered the Army in 1917, was assigned to various stations in this country and the Philippines in World War I, served at other installations prior to and during World War II, and was retired in April, 1951. He was buried with full military honors in Philadelphia National Cemetery.

Texas

Conference for Veterinarians.—The eighth annual Texas conference for veterinarians was held June 2-3, 1955, at the School of Veterinary

Medicine, A. & M. College of Texas, College Station.

The program listed the following speakers and their subjects: Drs. James W. Pirie, Cedar Rapids, Iowa, artificial breeding of dairy cattle; Frank R. Booth, Elkhart, Ind., canine ear surgery and choosing drugs; C. D. Van Houweling, director, Livestock Regulatory Programs, ARS, Washington, D.C., regulatory programs; Gabel H. Conner, Michigan State University, East Lansing, bovine teat surgery and vaginal prolapse; R. J. Beamer, A. & M. College of Texas, small animal surgery; Henry A. Holle, Texas State Department of Health, Austin, public health; J. E. Burnside, Georgia Coastal Plain Experiment Station, Tifton, toxicological tests; W. C. Banks, A. & M. College of Texas, moderated a panel discussion.

Members of the faculty of the School of Veterinary Medicine, A. & M. College of Texas, also participated in the demonstrations.

s/W. W. ARMISTEAD, *Dean*.

West Virginia

Tuberculin Test Featured at State Meeting.—A special feature of the West Virginia V.M.A. meeting on February 20-21 was a demonstration of tuberculin testing and reactor reading for the benefit of young veterinarians who had not had an opportunity to observe these techniques. Several cows were purchased and tuberculosensitized on January 18. They were then injected with tuberculin on February 18 and the reactions were observed during the meeting. It was a successful and worthwhile demonstration.

FOREIGN NEWS

Africa

Artificial Insemination in Africa.—In spite of problems due to trypanosomiasis, the government of British West Africa continues its attempt to increase milk yields by crossing the local zebu (Brahman) cows with exotic bulls. Because of the breed's hardiness and ability to withstand heat, Holstein-Friesian bulls in England were chosen, and semen from them is flown to the Veterinary Department on the Jos Plateau in Nigeria at weekly intervals. One such bull is also kept in this tsetse fly region in a screened stable and all animals are given prophylactic treatments with antryicide. This bull has several calves approaching breeding age. They will be bred to zebu bulls to maintain resistance to local diseases. However, French West African authorities claim best production of beef and milk from the first crosses. They use Montbelliard and Charolais bulls.

s/DESMOND H. HILL, *Foreign Correspondent*.

Greece

Greek Army Veterinary Service Adopts U. S. Army Inspection Goals.—Brigadier General N. Koemtzopoulos, director of the veterinary and remount service, Greek National Army, announced that United States Army veterinary standards of sanitation in food processing, rigid inspection of all foods of animal origin and writing of technical specifications to be met in the purchase of such food are being adopted by the Greek Army to achieve "the preservation of the armed forces' strength and savings for the national economy." General Koemtzopoulos paid tribute to the assistance given by Lt. Col. D. C. Kelley, Lyons, Kan., the U. S. Army Veterinary Corps officer now on duty in Greece with the Army Section, Joint U. S. Military Aid Group.

Colonel Kelley is senior instructor at the school and has been invaluable, according to General Koemtzopoulos, in explaining the films, educational materiel, veterinary instruments, and equipment provided the school by the Joint U. S. Military Aid Group, Greece.

STATE BOARD EXAMINATIONS

Utah—The Utah Board of Veterinary Examiners has announced that its annual examination for licensure will be held at the State Capitol in Salt Lake City, July 11-12, 1955. Dr. W. H. Hendricks, 1419 E. 17th St., Salt Lake City, Utah, secretary.

VETERINARY MILITARY SERVICE

Colonel Barta Retires.—Colonel James C. Barta, V.C., U. S. Air Force, retired on April 30, 1955. Colonel Barta served with the Army Veterinary Corps at the beginning of World War II, but later was reassigned to the Air Corps and served throughout the war as staff veterinarian, Headquarters Second Air Force. He was a pioneer in veterinary public health and its application in the Air Force.

BIRTHS

Dr. (WSC '44) and Mrs. George V. Ott, Cathlamet, Wash., announce the birth of a daughter, Mary Lou, on Jan. 10, 1955.

Dr. (OSU '53) and Mrs. J. A. Hines, Friendship, Wis., announce the birth of their third child, Sally Ann, on March 6, 1955.

Dr. (KSC '54) and Mrs. Reed R. Rumsey, Fort Lawton, Wash., announce the birth of a daughter, Jill Jeananne, on April 4, 1955.

Dr. (UP '54) and Mrs. Hugh Whitney Edmonds, Claremont, N. H., announce the birth of their first child, Hugh Whitney, Jr., on April 20, 1955.

Dr. (UP '42) and Mrs. John F. Patt, Boyertown, Pa., announce the birth of their third child, Frederick Steven, on April 26, 1955.

Dr. (MO '50) and Mrs. M. D. Conrad, Plattsburg, Mo., announce the birth of a daughter, Jean Louise, on May 17, 1955.

DEATHS

Daniel B. Allen (ONT '98), Sault Ste Marie, Mich., died (date not known). Dr. Allen, a general practitioner, was a member of the Michigan State Veterinary Medical Association and had been a member of the AVMA.

★**Orrin E. Barth** (CVC '10), Birmingham, Ala., died recently. Dr. Barth had been employed by the U. S. Bureau of Animal Industry for 39 years, having retired two years prior to his death. He was admitted to the AVMA in 1939.

Charles R. Brand (NYA '06), 77, Oneonta, N. Y., died Dec. 12, 1953. Dr. Brand was a general practitioner. He is survived by his widow, a son, a daughter, and two grandchildren.

George W. Brown (KCV '84), 88, Springfield, Ill., died Oct. 3, 1954. Dr. Brown is survived by his widow, five daughters, four sons, seventeen grandchildren, twenty-two great grandchildren, and two great great grandchildren.

Pleasant H. Browning (NYC '91; CVC '03), 85, San Jose, Calif., died April 16, 1955. Dr. Browning served San Jose for 40 years prior to his retirement in 1944. He is survived by his widow, a son, and two brothers. Dr. Browning was for many years a member of the AVMA.

Charles C. Burns (API '39), 40, Thomasville, Ga., died March 15, 1955. Dr. Burns, a general practitioner, had been a member of the AVMA. He is survived by his widow and a daughter.

Leopold Buyvid (BRU '28), Brooklyn, N. Y., died March 28, 1955. Dr. Buyvid, who received his education in Czechoslovakia, had served for many years with the U. S. Agricultural Research Service (formerly BAI).

★**James A. Cameron** (MCK '10), 69, Oak Park, Ill., died May 19, 1955. Dr. Cameron had been state livestock inspector for the Union Stockyards for 38 years, and had also served as the official veterinarian for the International Livestock shows in Chicago for many years. Dr. Cameron was a member of the AVMA. He is survived by his widow, a son, and a daughter.

R. B. Conaway (ISC '32), 46, Jefferson City, Mo., died Jan. 18, 1955, in an automobile accident. Dr. Conaway, assistant state veterinarian, had formerly been in general practice. He is survived by a daughter and a son.

★**George E. Corwin** (USC '03), 76, Hartford, Conn., died April 11, 1955. Dr. Corwin was a

member of the AVMA. An obituary appears on page 93 of this JOURNAL.

James W. Crowl (USC '27), Centerville, Md., died Jan. 10, 1955. For the past ten years, Dr. Crowl had been president of the Queen Annes Record and Observer Publishing Company.

Charles Doerrie (NYC '93), Boonville, Mo., died April 21, 1955. Dr. Doerrie had been a member of the Missouri Veterinary Medical Association. He is survived by a son and a daughter.

Robert J. Farley (ONT '97), Toronto, Ont., died June 20, 1954. Dr. Farley was a general practitioner.

★William F. Flanary (ONT '10), 66, St. Charles, Minn., died April 1, 1955, of a heart condition. Dr. Flanary had practiced in St. Charles for 45 years and had served as president (1951) of the Minnesota State Veterinary Medical Society, as mayor of St. Charles, as commander of the American Legion post, and for many years on the board of education. He was for 44 years a member of the AVMA. Dr. Flanary is survived by his widow; four sons, one of whom, James B. (ISC '43), practiced with his father; a daughter; and eight grandchildren.

David D. Helm, Jr. (UP '16), 59, Camden, N. J., died Feb. 11, 1955. An obituary appears on page 97 of this JOURNAL.

★Henry E. Hess (UP '11), 64, Philadelphia, Pa., died April 26, 1955. Colonel Hess was a member of the AVMA. An obituary appears on page 98 of this JOURNAL.

Herbert H. Hodgson (ONT '15), Niagara Falls, Ont., died Aug. 31, 1954. Dr. Hodgson was a general practitioner.

Logan B. Huff (KCV '04), Aurora, Ill., died recently. Dr. Huff was a general practitioner.

Ivan B. Irwin (ONT '11), Beamsdale, Ont., died Dec. 1, 1954. Dr. Irwin had been with the Health of Animals Division, Department of Agriculture, at Guelph, Ont., for several years and had retired only a short time before his death.

T. Boyd Jacobs (OSU '14), 70, Newberry, S. Car., died March 15, 1955. Dr. Jacobs had retired about twelve years ago, due to ill health. He is survived by his widow.

Alfred E. James (ONT '88), Ottawa, Ont., died Feb. 9, 1954. Dr. James was one of the founders of the Central Canada Veterinary Medical Association, which he served for many years as secretary.

Theodore Kott (CVC '08), Trenton, Mo., died recently. Dr. Kott had retired from practice.

John Lawrason (ONT '96), St. George, Ont., died in July, 1954. Dr. Lawrason had practiced in St. George for many years.

J. R. MacDonald (ISC '18), 64, Fort Dodge, Iowa, died of a heart attack on March 26, 1955. Dr. MacDonald, who previously practiced in

Clarion, Iowa, had been a feed manufacturer in Fort Dodge since 1924.

★William F. Osterholtz (KCV '18), 67, St. Louis, Mo., died in July of 1954. Dr. Osterholtz was a member of the National Association of Federal Veterinarians and of the AVMA.

William T. Pittinger (GR '16), 67, Detroit, Mich., died Dec. 2, 1954. Dr. Pittinger was a small animal practitioner.

★Harry S. Pease (OSU '13), 65, Canonsburg, Pa., died March 14, 1955. Dr. Pease, a general practitioner, had served in World War I and was active in civic affairs. He was admitted to the AVMA in 1917. Dr. Pease is survived by his widow and two daughters.

★Reuben B. Rath (GR '12), 66, Detroit, Mich., died April 29, 1955, in an automobile accident. Dr. Rath was employed by the U. S. Agricultural Research Service. He was a member of the AVMA.

★Jay W. Reeder (CVC '07), 78, Norwalk, Ohio, died April 20, 1955. Dr. Reeder had served with the U. S. Department of Agriculture for 30 years and for 15 years as dairy food inspector in Sandusky, Ohio. He was a life member of the AVMA. Dr. Reeder is survived by his widow, a son, and three grandchildren.

★Showley H. Regenos (OSU '13), 65, Zionsville, Ind., died April 16, 1955. Dr. Regenos was a life member of the AVMA. An obituary appears on page 95 of this JOURNAL.

★Clarence W. Swingley (CVC '09), 64, Freeport, Ill., died Feb. 27, 1955, of a coronary occlusion. Dr. Swingley had practiced and operated a veterinary supply business in Freeport for 45 years. He was a member of the AVMA.

Marino E. Tabusso (TUR '01), Lima, Peru, died recently. In addition to his D.V.M. degree, Dr. Tabusso had also received M.D. degrees from the University of Turin in Italy and from the Universidad de San Marcos in Lima, Peru. He had been a member of the AVMA.

George M. Wormley (ISC '20), 58, Moorpark, Calif., died March 28, 1955. Dr. Wormley had practiced at State Center, Iowa, for 32 years but gave up his practice in 1951 due to ill health. Later he accepted a position as poultry inspector for the U.S.D.A. and had worked in several states before coming to California. Dr. Wormley had been a member of the AVMA. He is survived by his widow, two daughters, and two sons.

John T. Unertl (CVC '92), 83, Milwaukee, Wis., died May 9, 1955. Dr. Unertl had practiced in Milwaukee for more than 50 years. He served as city veterinarian until the past few years and at one time was secretary and treasurer of an insurance company which then carried insurance on 3,000 horses in the City of Milwaukee alone. Dr. Unertl had been a member of the AVMA. He is survived by his widow and a daughter.

★Indicates members of the AVMA.



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COMING MEETINGS

Notices of Coming Meetings must be received by 4th of month preceding date of issue

Mississippi State Veterinary Medical Association. Annual meeting. Buena Vista Hotel, Biloxi, Miss., July 10-12, 1955. Charles H. Horne, Newton, Miss., secretary.

Virginia Veterinary Medical Association. Summer meeting. Hotel Roanoke, Roanoke, Va., July 17-19, 1955. Wilson B. Bell, 210 Clay St., Blacksburg, Va., secretary.

Northwestern Ohio Veterinary Medical Association. Summer clinic. Archbold, Ohio, July 20, 1955. C. S. Alvano, 1683 W. Bancroft Ave., Toledo, Ohio, secretary.

Kentucky Veterinary Medical Association. Summer meeting. Seelbach Hotel, Louisville, Ky., July 20-21, 1955. R. J. Ausherman, 171 N. Upper St., Lexington, Ky., secretary.

Alabama Conference for Veterinarians. School of Veterinary Medicine, Alabama Polytechnic Institute, Auburn, Ala., July 24-27, 1955. R. S. Sugg, dean.

Northwest Veterinary Medical Association. Annual meeting. Multnomah Hotel, Portland, Ore., July 25-27, 1955. E. L. Holden, Box 445, Oswego, Ore., secretary.

Iowa State College. Conference for veterinarians. Division of Veterinary Medicine, Iowa State College, Ames, Iowa, July 26-27, 1955. Paul C. Bennett, Veterinary Diagnostic Laboratory, Iowa State College, Ames, Iowa.

American Veterinary Medical Association. Annual meeting. Municipal Auditorium, Minneapolis, Minn., Aug. 15-18, 1955. J. G. Hardenbergh, 600 S. Michigan Ave., Chicago 5, Ill., executive secretary.

Louisiana Veterinary Medical Association, Inc. Annual meeting. Washington Youree and Captain Shreve Hotels, Shreveport, La., Aug. 24-25, 1955. R. B. Lank, Baton Rouge, La., secretary.

New Mexico Veterinary Medical Association. Annual meeting. Hilton Hotel, Albuquerque, N. M., Sept. 12-13, 1955. Charles Webster, 711 N. Quincy St., Roswell, N. M., secretary.

Canadian Veterinary Medical Association. Annual meeting. Bessborough Hotel, Saskatoon, Sask., Sept. 12-15, 1955. Claude Kealey, 1195 Wellington St., Ottawa 3, Ont., secretary.

New York State Veterinary Medical Society. Annual meeting. Hotel Statler, New York, N. Y., Sept. 14-16, 1955. Joan S. Halat, 803 Varick St., Utica, N. Y., acting executive secretary.

Colorado Veterinary Medical Association. Annual meeting. Steamboat Springs, Colo.,

Sept. 16-18, 1955. Walter R. Haas, Eaton, Colo., secretary.

Washington State Veterinary Medical Association. Annual meeting. Hotel Leopold, Bellingham, Wash., Sept. 23-24, 1955. R. E. Ebright, 2836 W. Maplewood St., Bellingham, Wash., general chairman.

Oklahoma A. & M. College. Conference for veterinarians. School of Veterinary Medicine, Oklahoma A. & M. College, Stillwater, Okla., Sept. 29-30, 1955. J. D. Friend, Department of Veterinary Anatomy, chairman.

New England Veterinary Medical Association. Annual meeting. Poland Spring House, Poland Springs, Maine, Oct. 2-5, 1955. C. Lawrence Blakely, 180 Longwood Ave., Boston, Mass., secretary.

Purdue University. Annual short course for veterinarians. Purdue University, Lafayette, Ind., Oct. 5-7, 1955. L. M. Hutchings, chairman, short course committee.

South Dakota Veterinary Medical Association. Annual meeting. Cataract Hotel, Sioux Falls, S. Dak., Oct. 12-13, 1955. J. L. Noordsy, Marion, S. Dak., secretary.

Southern Veterinary Medical Association and Florida Veterinary Medical Association. Joint annual meeting. George Washington Hotel, Jacksonville, Fla., Oct. 16-19, 1955. A. A. Husman, 320 Agricultural Bldg., Raleigh, N. Car., secretary, Southern Association.

Eastern Iowa Veterinary Medical Association, Inc. Annual meeting. Hotel Montrose, Cedar Rapids, Iowa, Oct. 13-14, 1955. Wayne H. Thompson, Earlville, Iowa, secretary.

U. S. Livestock Sanitary Association. Annual meeting. Jung Hotel, New Orleans, La., Nov. 16-18, 1955. R. A. Hendershot, 1 W. State St., Trenton 8, N. J., secretary.

Cornell University. Annual conference for veterinarians. New York State Veterinary College, Cornell University, Ithaca, N. Y., Jan. 4-6, 1956. W. A. Hagan, dean.

Foreign Meetings

Third International Congress of Biochemistry. Brussels, Belgium, Aug. 1-6, 1955. Claude Liebecq, 17 Place Delcour, Liege, Belgium, secretary general.

International Association of Hydatidology. Sixth Congress. Athens, Greece, Sept. 14-18, 1956. Prof. B. Kourias, 1 MacKenzie King St., Athens, Greece, general secretary.

(Continued on p. 281)

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1. Grumbles, L. C., Wills, F. K. and Boney, W. A.: *J. Am. Vet. M. A.* **124**: 217, 1954.
2. Smith, H. W.: *Vet. Rec.* **66**: 215, 1954.
3. Cosgrove, A. S.: *Vet. Med.* In press.

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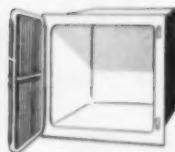
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Regularly Scheduled Meetings

Atlanta (Ga.) Veterinary Society, the second Tuesday of every month at the Elks Home on Peachtree St., Atlanta, Ga. J. L. Christopher, Smyrna, Ga., secretary.

Baltimore City Veterinary Medical Association, the second Thursday of each month, September through May (except December), at 9:00 p.m. at the Park Plaza Hotel, Charles and Madison St., Baltimore, Md. Harry L. Schultz, Jr., 9011 Harford Rd., Baltimore, Md., secretary.

Bay Counties Veterinary Medical Association, the second Tuesday of each month. E. Paul, Redwood City, Calif., secretary.

Cedar Valley Veterinary Association, the second Monday of each month, except January, July, August, and October, at Black's Tea Room, Waterloo, Iowa. D. A. Buchanan, Grundy Center, Iowa, secretary.

Central Alabama Veterinary Association, the first Thursday of each month. G. J. Phelps, Jr., Montgomery, Ala., secretary.

Central Arizona Veterinary Medical Association, the second Tuesday of each month. F. R. Benton, 302 South Country Club Dr., Mesa, Ariz., secretary.

Central California Veterinary Medical Association, the fourth Tuesday of each month. Herbert Piper, 4575 Ventura Ave., Fresno, Calif., secretary.

Central Carolina Veterinary Medical Association, the second Wednesday of each month at 7:00 p.m. in the O'Henry Hotel in Greensboro, N. Car. R. T. Copeland, 1800 Walker Ave., Greensboro, N. Car., secretary.

Central Indiana Veterinary Medical Association, the second Wednesday of each month. Charles J. York, P. O. Box 1656, Indianapolis 6, Ind., secretary.

Chicago Veterinary Medical Association, the second Tuesday of each month. Mark E. Davenport, Jr., 215 S. Edgewood Ave., LaGrange, Ill., secretary.

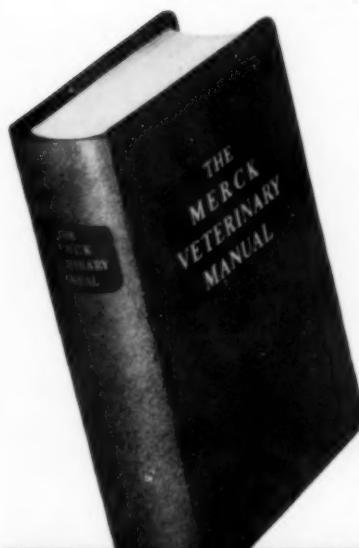
Coastal Bend (Texas) Veterinary Association, the second Wednesday of each month. J. Marvin Prewitt, 4141 Lexington Blvd., Corpus Christi, Texas, secretary.

Coon Valley Veterinary Association, the second Wednesday of each month, September through May, at the Bradford Hotel, Storm Lake, Iowa. D. I. Lee, Sac City, Iowa, secretary.

Cuyahoga County (Cleveland, Ohio) Veterinary Medical Association, the first Wednesday of each month, September through May (except January), at 9:00 p.m. at the Carter Hotel, Cleveland, Ohio. Ed. R. Jacobs, 5522 Pearl Rd., Cleveland, Ohio, secretary.

(Continued on p. 30)

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East Bay (Calif.) Veterinary Medical Association, bimonthly, the fourth Wednesday. John T. Turver, 1201 E. 12th St., Oakland 6, Calif., secretary.

Eastern Illinois Veterinary Medical Association, the first Thursday of March, June, September, and December. A one-day clinic is held in May. R. P. Link, College of Veterinary Medicine, University of Illinois, Urbana, Ill., secretary.

Eastern North Carolina Veterinary Medical Association, the first Friday of each month. John D. Baker, Goldsboro, N. Car., secretary.

Fayette County Veterinary Association, Iowa, the third Tuesday of each month, except in July and August, at Pa and Ma's Restaurant, West Union, Iowa. Donald E. Moore, Box 178, Decorah, Iowa, secretary.

Greater St. Louis (Mo.) Veterinary Medical Association, the first Friday of the month (except July and August) at the Sheraton Hotel, Spring Ave. and Lindell Blvd. Luther E. Fredrickson, Room 25, Municipal Courts Bldg., St. Louis, Mo., secretary.

Jacksonville (Fla.) Veterinary Medical Association, the second Thursday of each month, time and place specified monthly. L. D. Barrett, Rt. 8, Box 572, Jacksonville, Fla., secretary.

Jefferson County Veterinary Society of Kentucky, Inc., the first Wednesday evening of each month

in Louisville or within a radius of 50 miles. Dr. W. E. Bewley, P.O. Box "H", Crestwood, Ky., secretary.

Kansas City Small Animal Hospital Association, the first Monday of each month, at alternating hospitals. W. F. Noland, 7504 Metcalf, Overland Park, Kan., secretary.

Kansas City Veterinary Medical Association, the third Tuesday of each month at Exchange Hall, ninth floor, Livestock Exchange Bldg., 1600 Genesee St., Kansas City, Mo. Busch Meredith, 800 Woodswether Rd., Kansas City 5, Mo., secretary.

Kern County (Calif.) Veterinary Medical Association, the first Thursday evening of each month. B. C. Watson, 825 14th St., Bakersfield, Calif., secretary.

Keystone (Pa.) Veterinary Medical Association, the fourth Wednesday of each month at the University of Pennsylvania School of Veterinary Medicine, 39th and Woodland Ave., Philadelphia 4, Pa. Raymond C. Snyder, 39th and Woodland Ave., Philadelphia 4, Pa., secretary.

Kyowva (Ky., Ohio, W. Va.) Veterinary Medical Association, the second Thursday of each month in the Hotel Prichard, Huntington, W. Va., at 8:30 p.m. Harry J. Fallon, 200 5th St. W., Huntington, W. Va.

(Continued on p. 32)

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Metropolitan New Jersey Veterinary Medical Association, the third Wednesday evening of each month from October through April at the Academy of Medicine, 91 Lincoln Park South, Newark, N. J. Myron S. Arlein, 2172 Millburn Ave., Maplewood, N. J., secretary.

Michiana Veterinary Medical Association, the second Thursday of each month, at the Hotel LaSalle, South Bend, Ind. L. D. Ramsay, 719 E. Jefferson Ave., La Porte, Ind., secretary.

Michigan, Southeastern Veterinary Medical Association, the second Thursday of every month, September through May. Gilbert Meyer, 14003 E. Seven Mile Road, Detroit 5, Mich., secretary.

Mid-Coast Veterinary Medical Association, the first Thursday of every even month. George McCollister, 2146 Broad St., San Luis Obispo, Calif., secretary.

Mid-State (Mich.) Veterinary Medical Association, the fourth Thursday of each month with the exception of November and December. Robert E. Kader, 5034 Armstrong Rd., Lansing 17, Mich., secretary.

Milwaukee Veterinary Medical Association, the third Tuesday of each month, at the Half-Way House, Blue Mound Rd. George F. Lynch, 201 West Devon St., Milwaukee 17, Wis., secretary.

Monterey Bay Area (Calif.) Veterinary Medical Association, the third Wednesday of each month. Lewis J. Campell, 90 Corral de Tierra, Salinas, Calif., secretary.

New Castle County (Del.) Veterinary Association, the first Tuesday of each month at 9:00 p.m. in the Hotel Rodney, Wilmington, Del. Arthur P. Coogan, 2102 New Road, Wilmington 5, Del., secretary.

New York City, Inc., Veterinary Medical Association of, the first Wednesday of each month at the New York Academy of Sciences, 2 East 63rd St., New York City. C. E. DeCamp, 43 West 61st St., New York 23, N. Y., secretary.

Northeast Iowa-Southern Minnesota Veterinary Association, the first Tuesday of February, May, August, and November at the Wisneslick Hotel, Decorah, Iowa, 6:30 p.m. Donald E. Moore, Box 178, Decorah, Iowa, secretary.

Northern Colorado Veterinary Medical Society, the second Monday of each month. William H. Beckenhauer, School of Veterinary Medicine, Colorado A. & M. College, Fort Collins, Colo., secretary.

Northern New Jersey Veterinary Association, the fourth Tuesday of each month at the Casa Mana in Teaneck, N. J. Edward Baker, 568 Grand Ave., Englewood, N. J., secretary.

(Continued on p. 34)

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Northern San Joaquin Valley Veterinary Medical Association, the fourth Wednesday of each month. Ernest Makino, Patterson, Calif., secretary.

Oklahoma County Veterinary Medical Association, the second Wednesday of every month except July and August. Carl L. Clark, 127 N. W. 23rd St., Oklahoma City, Okla., secretary.

Orange Belt Veterinary Medical Association, the second Monday of each month at 8:00 p.m. in Antlers Hotel, San Bernardino, Calif. Jay C. Wallis, 112 N. Girard St., Hemet, Calif., secretary.

Orange County (Calif.) Veterinary Medical Association, the third Thursday of each month. Donald E. Lind, 2643 N. Main St., Santa Ana, Calif., secretary.

Peninsula (Calif.) Veterinary Medical Association, the third Monday of each month. T. D. Harris, San Mateo, Calif., secretary.

Piedmont (N. Car.) Veterinary Medical Association, the last Friday of each month at 7:00 p.m. in Mull's Motel in Hickory, N. Car. W. W. Dickson, Box 1071, Gastonia, N. Car., secretary.

Piedmont (S. Car.) Veterinary Medical Association, the third Wednesday of each month at the Fairforest Hotel, Union, S. Car. Worth Lanier, York, S. Car., secretary.

Pima County (Ariz.) Veterinary Medical Association, the third Wednesday of each month in Tucson. E. T. Anderson, 8420 Tanque Verde Rd., Tucson, Ariz., secretary.

Redwood Empire (Calif.) Veterinary Medical Association, the third Thursday of each month. Robert E. Clark, Napa, Calif., secretary.

Sacramento Valley (Calif.) Veterinary Medical Association, the second Wednesday of each month. W. E. Steinmetz, 4227 Freeport Blvd., Sacramento, Calif., secretary.

Saginaw Valley (Mich.) Veterinary Medical Association, the last Wednesday of each month. S. Correll, Rt. 1, Midland, Mich., secretary.

San Diego County Veterinary Medical Association, the fourth Tuesday of each month except July and August. E. R. Quortrup, 4005 Rosecrans St., Building 2, San Diego, Calif., secretary.

San Fernando Valley (Calif.) Veterinary Medical Association, the second Friday of each month at Eaton's Restaurant in Studio City, Calif. R. A. Button, 5954 Van Nuys Blvd., Van Nuys, Calif., secretary.

Seattle Veterinary Medical Association, the third Tuesday of each month in the Trinity Episcopal Church, 8th and James St., Seattle, Wash. P. R. Des Rosiers, 5508 2nd Ave. N. W., Seattle 7, Wash., secretary.

Southeastern (Mich.) Veterinary Medical Association, the third Wednesday of each month in

(Continued on p. 361)

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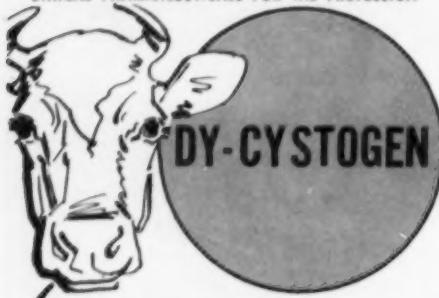
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(COMING MEETINGS—continued from p. 34)

ciation, the fourth Wednesday of every month, September through May. Gilbert Meyer, 14003 E. Seven Mile Rd., Detroit 5, Mich., secretary. Southern Arizona Veterinary Medical Association, the third Wednesday of each month at 7:30 p.m. E. T. Anderson, Rt. 2, Box 697, Tucson, Ariz., secretary.

Southern California Veterinary Medical Association, the third Wednesday of each month. Howard C. Taylor, 2811 West Olive St., Burbank, Calif., secretary.

South Florida Veterinary Society, the third Tuesday of each month, at the Seven Seas Restaurant, Miami, Fla. J. C. Matlock, 4561 Ponce DeLeon Blvd., Coral Gables, Fla., secretary.

South Puget Sound (Wash.) Veterinary Medical Association, the second Thursday of each month except July and August. Jo Walker, Agriculture Experiment Station, Puyallup, Wash., secretary.

Tenth District (Ind.) Veterinary Medical Association, the third Thursday of each month. W. E. Sharp, Union City, Ind., secretary.

Tulsa (Okla.) Veterinary Medical Association, the third Thursday of each month in Directors' Parlor of the Brookside State Bank, Tulsa, Okla. Merle S. Watts, 5302 E. 11th St., Tulsa, Okla., secretary.

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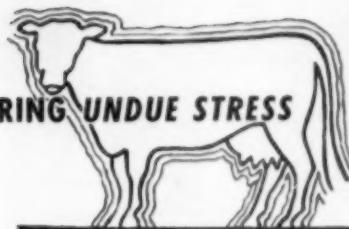
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(Continued on p. 40)

 Rabies Vaccine is easily administered. Because of the "Reconstiquick" feature, the vaccine immediately is reconstituted and goes into a fine homogenous suspension which passes easily through a 24 gauge needle.

Only a 3 cc. dose of reconstituted vaccine is required.

 Rabies Vaccine is scientifically vacuum dried and sealed — your assurance of immunizing potency and safety.



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Veterinarian wanted for long-established small animal practice in California; salary, bonus. State qualifications. Address "Box R 9," c/o JOURNAL of the AVMA.

Veterinarian wanted for small animal hospital in Los Angeles. Job leading to partnership and possible ownership in a short time. Address "Box R 10," c/o JOURNAL of the AVMA.

(Continued on p. 42)

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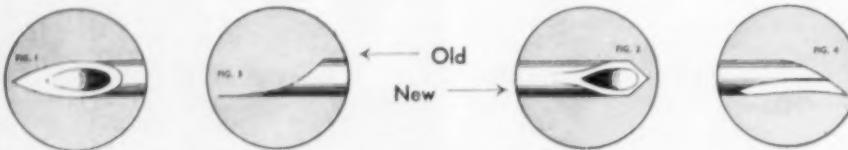


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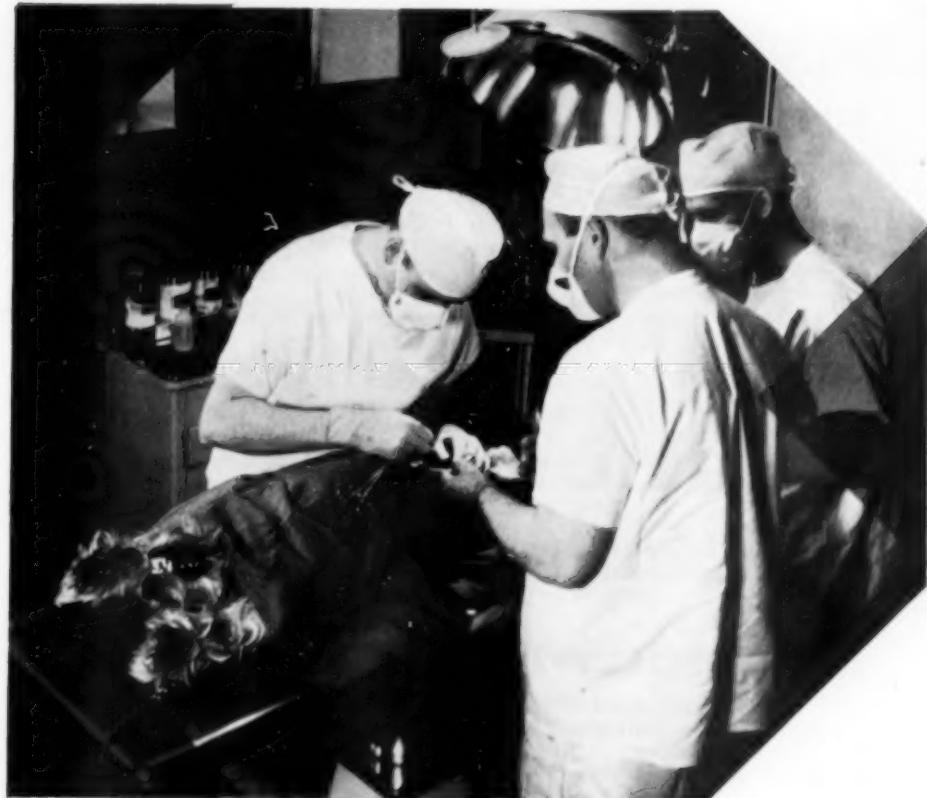
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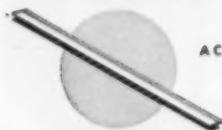
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MASTICS contain no grease, no wax, no insoluble materials to remain in the udder retarding antibiotic action. MASTICS milk out completely—produce no residue on the strainer.

MASTICS are so effective, cows are returned to the herd more promptly with less loss of production.

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MASTICS SAVE TIME, MONEY, MILK

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West Chester, Penna.

(CLASSIFIED ADS—continued from p. 40)

Doctor of veterinary medicine wanted for large institute for cancer research. Physical plant consists of new 516-bed patient building. New seven-story basic science research laboratory building to be constructed beginning summer, 1955. Institute has considerable animal colonies both at Buffalo and at the animal farm at Springville, N. Y., 25 miles from Buffalo. Veterinarian would be in charge of medical care of all animals including the breeding colonies and the experimental group. Wide opportunity for experimental, surgical, and other types of research. Salary, \$5,090-\$6,320, one month vacation, liberal sick leave, good pension program. Must be graduate of recognized school of veterinary medicine. Address Mr. Arthur Lepinot, Administrator, Roswell Park Memorial Institute, Buffalo 3, N. Y.

Graduate assistant veterinarian wanted for small animal practice. Address Dr. Alexander Slawson, 2414 Amsterdam Ave., New York 33, N. Y.

(Continued on p. 44)

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Veterinarian wanted for poultry disease diagnostic work in eastern state laboratory. Address "Box R 11," c/o JOURNAL of the AVMA.

Man wanted to assume full charge of operating small animal hospital located in Maryland; \$125 per week plus percentage. Able to lease at any time in future. Must be licensed. Two-room apartment included. Address "Box R 14," c/o JOURNAL of the AVMA.

Veterinarian with New York license wanted as assistant in small animal practice on Long Island. State qualifications, salary expected; references required. Address "Box P 27," c/o JOURNAL of the AVMA.

Veterinarians wanted for milk and rabies control. Federal pay and allowances, \$5,060-\$5,840. Two years' experience required with any state license. Send full details to the Health Department, Washington, D. C.

(Continued on p. 46)

{ A New (April, 1955) Journal . . .

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Write for Bulletin VM 71

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Set of above four — postpaid \$50.00

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Wanted—Positions

Position wanted leading to lease, partnership, or purchase of small animal practice. Age 28. Licensed in California, Nevada. Address "Box P 1," c/o JOURNAL of the AVMA.

Veterinarian with F.D.A. and commercial research experience interested in relocating in commercial or academic work. Married, age 40; advanced degree in pathology. Address "Box R 16," c/o JOURNAL of the AVMA.

Wanted—Practices

Wanted, in New Jersey, an association, partnership, or outright purchase of predominantly small animal practice. Am thoroughly experienced; very responsible. Address "Box P 6," c/o JOURNAL of the AVMA.

Qualified veteran has substantial down payment to buy small animal hospital in California or will lease or accept position leading to partnership or purchase. Address "Box M 16," c/o JOURNAL of the AVMA.

Mature experienced veterinarian, Florida license, would like to contact individual interested in financing small animal hospital in Florida. Lucrative proposition to right party. Address "Box R 2," c/o JOURNAL of the AVMA.

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(Continued on p. 52)

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____ Suite (specify type of accommodations wanted) _____

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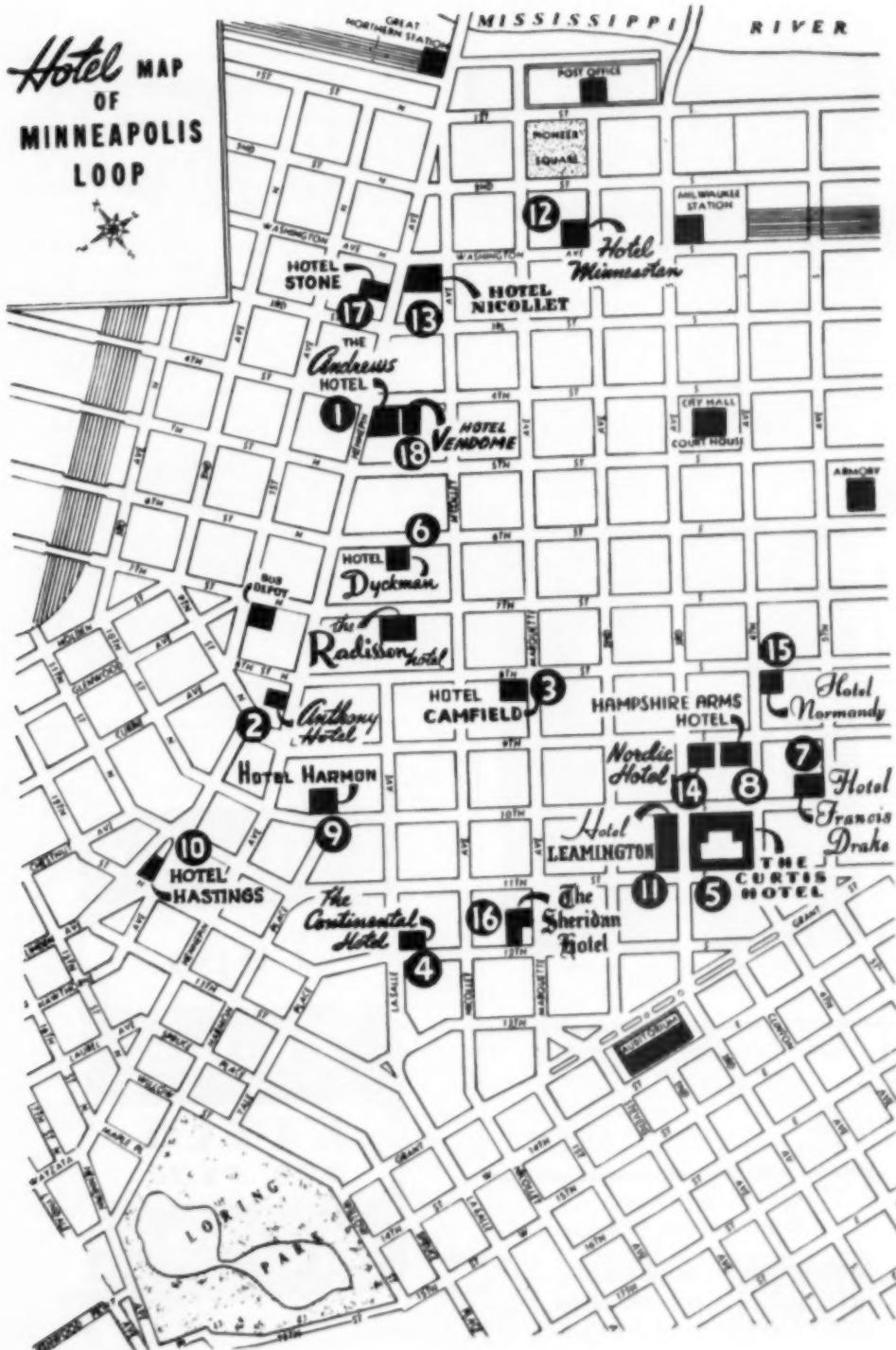
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Leaving on (date) _____ at _____ a.m. _____ p.m.

Room will be occupied by (attach list of additional names if necessary).

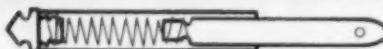
Your Name (Print or Type) _____

Street Address _____ City and State or Province _____

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OF
MINNEAPOLIS
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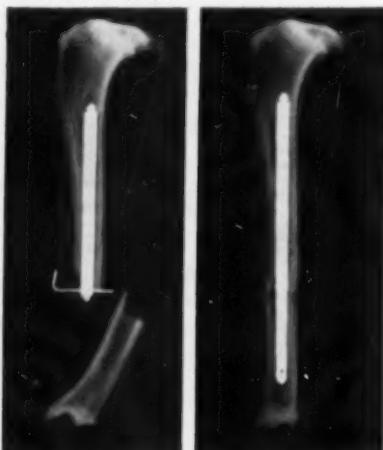


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*Jonas, Self-Retaining Medullary Extension Splint, JAVMA, 124, (1954), pp436-440. Proceedings Book, A.V.M.A. Convention 1954, pp270-275. Patent No. 2,672,861



Tibia. Assembled splint in longer fragment. Cotterpin holds compressed spring and pin in sleeve.

Splint extended. Cotterpin withdrawn, pin projected into shorter fragment of tibia.

SET OF 12 SPLINTS AND 3 REAMERS

In Specially Designed Wooden Case
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S. Diameter .156"	4 lengths (2 1/4" to 4 1/4")
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Complete Set, \$45.00

Replacement Pins, \$3.50 each



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Correspondence

Journal of the AVMA:

I am enclosing a couple of poems which Dr. Barsaleau composed in his "doodling" the other day and which I thought might be of interest to your readers.

Sincerely,

s/Mrs. R. B. Barsaleau.
San Luis Obispo, Calif.

Frustration

Lonesome indeed is the vet
Who's heard the phrase, "She's a pet
—In the small lot out back.
Take a rope and some grain in a sack,
She'll come and then you can see
The stuff that's as tight as can be"—
Well, I've taken the rope and a sack
And I've run 'em and cussed 'em and such,
"Till I fell flat on my back.
My profession would seem just *too* much!
Then my client says with a grin,
"Afraid of strangers—yup—won't come in.
I'll leave the afterbirth there,
'Till you've caught up on air;
And say, Doc, by the way,
Will you be out Tuesday or next day?"

— R. B. Barsaleau

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without smoke, odor,
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Mixed practice for sale in town of 7,500; good small animal practice. Small animal hospital on lease. Immediate possession; leaving for partnership. Address "Box R 12," c/o JOURNAL of the AVMA.

Practice available, 70% small animal, 30% large animal; established 3 years. Nothing to buy except furnishings and a few drugs. Available immediately. Address Dr. L. H. Austin, Box 218, Sanford, N.C.

(Continued on p. 56)

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Small animal hospital and general practice in rural Nebraska livestock area; established, 1934. Includes completely equipped hospital building and office. Gross income last year, \$19,000; price \$22,000.

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Vaccine, 2 vials Sterile Diluent, 2 cc.)
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CARICIDE® Diethylcarbamazine TABLETS:
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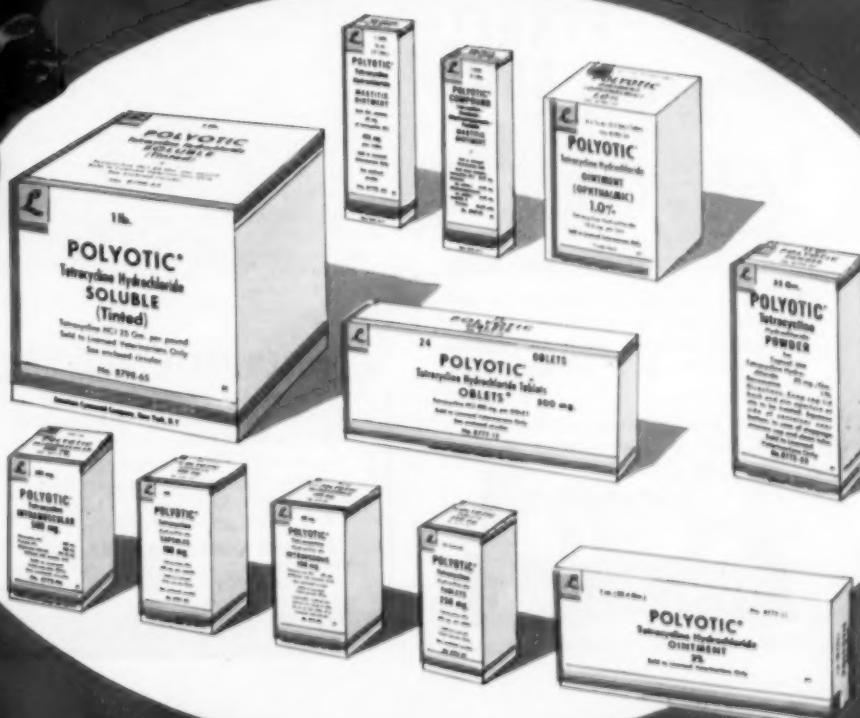
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(Continued on p. 57)

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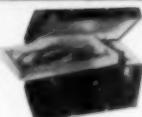


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folder N-4 OB forceps

folder N-5 range brand

folder N-2 glas-kennels

folder N-6 firing irons

folder N-3 "B" irons

folder N-7

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Index to Advertisers in This Issue

Abbott Laboratories	9, 41
Affiliated Laboratories	Insert between pp. 16-17
Albony Serum Company	31
Allied Mills	57
Armour Veterinary Laboratories	16, 37
Arnold & Sons Veterinary Instruments	40
Ashe Lockhart, Inc.	3rd cover
Associated Concentrates	14
Astra Pharmaceutical Products, Inc.	11
AVMA Report	8
Baltimore Wire and Iron Works	31
Boston Instrument Mfg. Co., Inc.	36
Carter Luff Chemical Co.	56
Chatham Pharmaceuticals, Inc.	15
Classified Advertisements	38
Clipper Service	56
Coming Meetings	26
Comstock Publishing Associates	13
Corn Belt Laboratories, Inc.	43
Corn States Laboratories, Inc.	2nd cover
Correspondence	50
Diamond Laboratories	18
Eaton Laboratories	12
Fleischmann's Yeast	23
Ford Kennel Equipment	56
Fort Dodge Laboratories, Inc.	24, 33
Fromm Laboratories, Inc.	19
Grain Belt Supply Company	53
Hamilton Pharmacal, Inc.	7
Haver Glover Laboratories	60
Hill Packing Company	38
Hotel Reservations	48, 49
Jackson Products	46
Jensen-Salsbury Laboratories, Inc.	4th cover, 50
Kasco Mills, Inc.	50
Ken-L Products	47
Kingan, Inc.	30
Kirschner Manufacturing Company	28
Lederle Laboratories	54, 55
Liability Insurance	59
MacAllan Laboratories	46
Martin Laboratories	42
Menley & James, Ltd.	34
Merck & Co., Inc.	29
Miles Laboratories	10
National Laboratories Corporation	5
Nicholson Manufacturing, Inc.	57
Norden Laboratories	1
Nutritional Research Associates	40
Osco Chemical Company, Inc.	42
Parke Davis & Company	25
Pelton & Crane Company	17
Pennsylvania Salt Manufacturing Co.	53
Pfizer Laboratories	20, 35, 38, 44, 46, 52, 58
Pitman-Moore Company	3
Popper & Sons, Inc.	32
Professional Printing Company, Inc.	52
Research Laboratories, Inc.	39
Sharp & Dohme, Inc.	22
Silent Glow Oil Burner Corp.	51
Ivan Servall, Inc.	44
Squibb	Insert between pp. 16-17
Sunbeam Corporation	40
Swift and Company	21
Upjohn Company	6
Vitaminerol Products Company	45
White, Dr. George Ransom	42
Winthrop Stearns, Inc.	27
David Yellen Co., Inc.	36

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(A plan used successfully by many outstanding small
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Procedure — Simultaneous injection of

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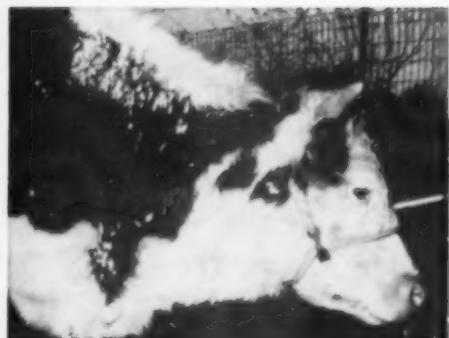
It has been found that when younger puppies are injected with Modified Live Virus Canine Distemper Vaccine (Lockhart) they are capable of producing an adequate immune response. This method enables the immunization procedure to be accomplished before the animals need to be exposed to OUTSIDE sources of distemper and hepatitis virus.

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1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	28
29	30	31	1

Typical Case History

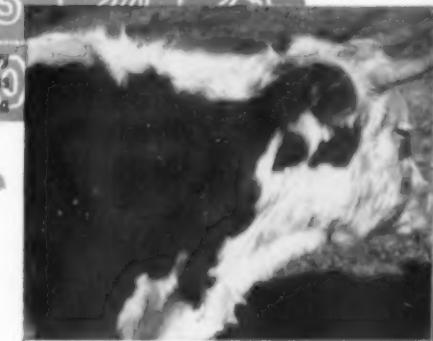
14 warts degenerating
fourteen days later of time
of second injection

complete recovery
three to seven weeks
following first injection

profuse wart growth
at date of
first 25-cc. injection

to this >

after 2 injections!



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field reports show Jen-Sal Wart Vaccine
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